the OIL AND GAS JOURNAL

Rates: Domestic, 1 year, $6.00; 6 months, $3.00. Canadian and foreign, 1 year, $7.00; 6 months, $3.50. All subscriptions are payable in advance

DECEMBER 3, 1936
VOL. 35, NO. 29

Extra copies of special issues are reserved for subscribers' needs and may be purchased by subscribers at the price of 50 cents per copy

TABLE OF CONTENTS

News Developments

Summary of Situation ... 9
Sparks From the News ... 10
$20,000,000 Expansion Plans Announced by Pipe Lines—By H. STANLEY NORMAN ... 11
I.P.A.A. Holds States Have Authority to Control Drilling—By C. O. WILLSON ... 12
Differences of Opinion Aired at Rodessa Hearing—By MITCHELL TUCKER ... 15
Washington View of Legislation on Oil in Coming Congress ... 17
Federal Suit to Discover Deduction Percentage ... 17
Three States May Boost Allowables 100,000 Bbls. Over Estimates ... 20
Montana Has Many Promising Oil Areas—By L. G. E. BIGNELL ... 23
Texas Allowable Increased ... 26
Six Producing Sands in Knobs Field, Western Kentucky—By T. P. SANDERS ... 27
News From Foreign Lands ... 28
Editorial ... 30

Field Operations

Field Operations Summarized ... 59
Kansas—By DAL DALRYMPLE ... 60
Gulf Coast—By F. L. SINGLETON ... 63-81
Eastern Fields—By STAFF CORRESPONDENT ... 64
East Texas—By L. E. BREDBERG ... 65
N. Louisiana-Arkansas—By MITCHELL TUCKER ... 66
Oklahoma—By DAL DALRYMPLE ... 68
California—By L. P. STOCKMAN ... 71
Canada—By VICTOR LAURISTON ... 72
Southwest Texas—By GEORGE WEBER ... 73
West and North Texas—By L. E. BREDBERG ... 74
Michigan—By PAUL A. ELLIOTT ... 76
Rocky Mountain Area—By TOLBERT R. INGRAM ... 78
Central West—By GEORGE A. WHITNEY ... 82
Wildcat Operations ... 83 to 91

Engineering—Operating

Many Factors Affect Production of Naphtha in Turner Valley—By G. R. ELLIOTT ... 32
Many Formations in Illinois Have Oil Possibilities—By T. P. SANDERS ... 40
Results of Five Years Flooding in Nowata By Carter—By PAUL REED ... 43
Conversion to Central Powers Reduces Operating Expense—By MITCHELL TUCKER ... 46
Operating Ideas ... 47
Drilling in Illinois Basin Found Difficult for Improvised Rig—By T. P. SANDERS ... 50
Problems From Readers—By L. G. E. BIGNELL ... 54
Technical Questions—By C. K. FRANCIS, Ph. D. ... 56

Markets and Prices

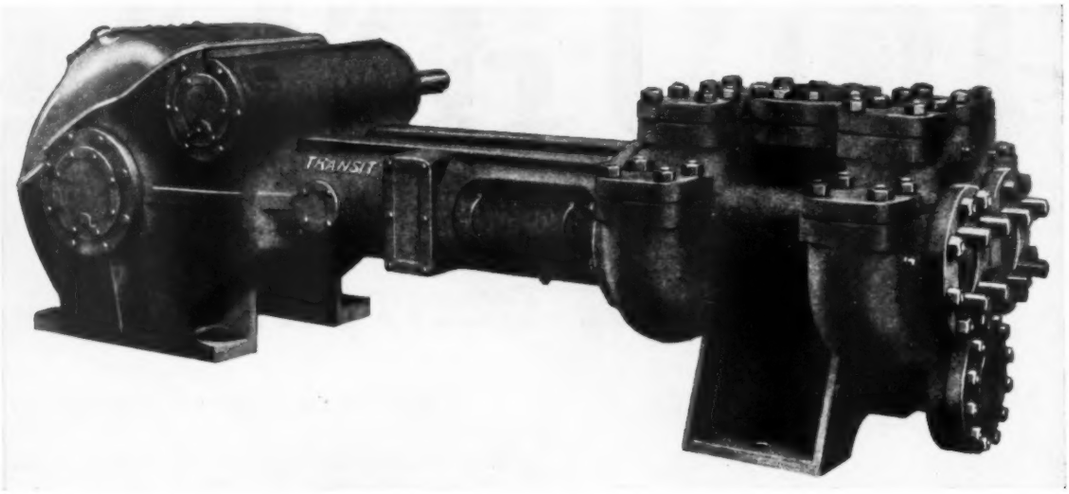
Group 3 Market—By T. F. SMILEY ... 96
New York Market—By H. STANLEY NORMAN ... 97
A.P.I. Refinery Report ... 97
Tank-wagon Markets ... 98
Refinery Prices ... 99
Crude Prices ... 100

Additional Features

Pipe Line Activity ... 18
Refinery Projects ... 18
Natural Gas News ... 19
Natural Gasoline ... 19
Obituaries ... 25
Record of Oil Securities ... 93
Do You Remember? ... 94
Personal Paragraphs ... 94-95
New and Improved Equipment ... 101
Oil Man's Calendar ... 102
Classified Advertising ... 102-103
Index to Advertisers ... 104

Copyright, 1936, by The Petroleum Publishing Co.

TRANSIT
ENCLOSED POWER PUMPS



TRANSIT Horizontal Duplex, Enclosed Power Pump for working pressures up to 1500 pounds, equipped with Side Pot Type liquid end.

Strong and rigid, entirely enclosed, splash lubricated power ends adapted to meet the widest possible range of present-day conditions. Designed for maximum accessibility.

ENTIRELY ENCLOSED: Dirt and dust sealed out; lubricating oil sealed in.

SPLASH LUBRICATION: A flood of oil to all power end parts.

ANTI-FRICTION BEARINGS: Heavy duty, self-aligning roller bearings on both gear and pinion shafts.

CRANKSHAFT AND GEARS: Forged steel cranks, cast steel center disc. Maximum strength where it is needed. Herringbone gears on all but 6″ stroke pumps. 6″ stroke pumps have helical gears.

LIQUID END: Time-tested TRANSIT Cast Iron Duplex En-bloc Side Pot type with easily removable shoulder type liners. Both suction and discharge valves readily accessible.

NATIONAL TRANSIT PUMP AND MACHINE CO.

OIL CITY, PENNSYLVANIA

NEW YORK - PHILADELPHIA - CHICAGO - CLEVELAND - PITTSBURGH - LOS ANGELES - HOUSTON - TULSA

Frick-Reid Supply Corporation
108 N. Trenton Ave.,
Tulsa, Oklahoma

Pratt-Gilbert Company
Phoenix,
Arizona

Reeves & Skinner Machinery Co.
2211 Olive Street,
St. Louis, Missouri

F. C. Richmond Machinery Company
320-326 West Second South St.,
Salt Lake City, Utah

Standard Supply and Hardware Company
822-838 Tchoupitoulas St., New Orleans, Louisiana

TRANSIT Pump & Engine Co.,
2261 East 15th St.,
Los Angeles, California

Eugene V. Winter Co.,
320 Market St.,
San Francisco, California

Effect of Shrinking Crude Supply Seen

CONTINUED tightening of crude supplies was a major factor in several developments of the past week. In Texas, Oklahoma and Kansas it was at the bottom of controversy over production allocations for December. The Texas Railroad Commission last week ignored the Bureau of Mines estimate of market demand and set its state daily allowable 56,270 barrels higher than the bureau recommendation for December and 92,210 barrels higher than the allowable set by the commission itself for November. This action, it was indicated the first of the week, might result in similar increases by Oklahoma and Kansas regulatory bodies, through steps to be taken within the next few days. Col. E. O. Thompson, chairman of the commission, explained its course by pointing to the pressing demand for oil and declaring that the supply of crude aboveground is in strong hands. Difficulty encountered by refiners in filling their crude requirements was regarded as one of the reasons for the rising strength of motor fuels and burning oils in most areas. In order to obtain connections some refiners are reported to be resorting to unusual arrangements with producers, although straight-out premiums are said to be avoided.

More than half of the drop of 49,958 barrels in the country's daily production was accounted for in Oklahoma, where a daily average of 568,125 barrels compares with 593,425 in the week ending November 21. This was 10,000 barrels in excess of the bureau recommendation and of the allowable fixed by the Corporation Commission. Texas exceeded its state-fixed allowable by 22,633 barrels and passed its daily production of the preceding week by 7,293 barrels. There was only a minor change in the Louisiana production, which continued to exceed the bureau estimate by about 35,000 barrels daily.

Production 3,009,586

Decrease 49,958

Active drilling continues in various areas. Completions reported in the first nine months of the year indicate that more than 24,000 oil and gas wells will have been drilled in the United States by the end of the year, making it the highest record in seven years. Much of the new work is in Texas.

The clamor for heating oils before the winter is well under way has evoked predictions that a greater scarcity will be seen in the 1936-37 season than that of last year, when even kerosene stocks were exhausted in the effort to meet the demand for light distillates. Prolonged motoring weather is helping to support a steady gasoline market.

In the producing division interest was excited by a test well in Montcalm County, Michigan, which gives promise of opening a new pool. Moffat County, Colorado, recorded an important discovery, a wildcat well good for 1,000 to 1,500 barrels of oil and 4,000,000 feet of gas being brought in.

Daily Average Production for Week

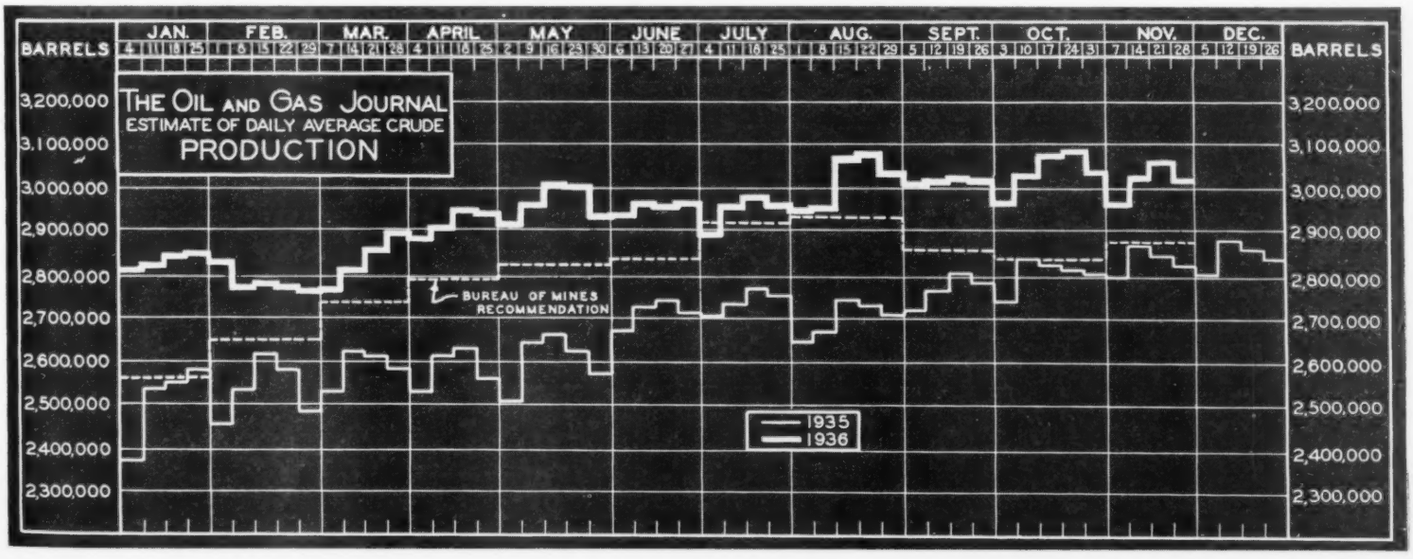
	Nov. 28, 1936	Bur. Mines Nov. est.	Nov. state allowables	Nov. 21, 1936
Oklahoma City	143,475	.....	.....	162,275
Seminole-St. Louis	92,850	.....	.....	93,725
Remainder of State	331,800	.....	.....	337,425
Total Oklahoma	568,125	558,400	558,400	593,425
East Texas	449,150	.....	.....	447,900
West Texas	162,594	.....	.....	162,500
North Central Texas	88,197	.....	.....	86,250
Texas Panhandle	63,448	.....	.....	63,750
East Central Texas	76,944	.....	.....	74,447
Gulf Coast—Texas	236,050	.....	.....	234,648
Southwest Texas	86,250	.....	.....	85,853
Total Texas	1,162,633	1,109,300	1,140,000	1,155,348
North Louisiana	77,510	.....	.....	76,700
Gulf Coast—Louisiana	157,897	.....	.....	156,950
Total Louisiana	235,407	198,600	238,350	233,650
Santa Fe Springs	44,150	.....	.....	45,450
Long Beach	64,750	.....	.....	64,400
Kettleman Hills	76,600	.....	.....	77,250
Remainder of State	381,700	.....	.....	405,900
Total California	567,200	549,600	*544,000	593,000
Kansas	165,400	154,500	154,500	167,300
Arkansas	27,820	28,100	.....	27,825
Eastern Fields	114,000	108,400	.....	113,700
Michigan	29,761	29,000	.....	29,726
Southeastern New Mexico	74,290	74,455	82,355	77,040
Rocky Mountain area	64,950	59,945	.....	68,530
Total United States	3,009,586	2,870,300	.....	3,059,544

*Recommendation of Central Committee of California Oil Producers.

Crude Oil Stocks in United States

(BUREAU OF MINES ESTIMATES)

Week ending November 14, 1936	289,964,000
Week ending November 7, 1936	290,194,000
Week ending November 16, 1935	316,409,000



SPARKS FROM THE NEWS

Gratitude

The combined power of diesel engines built in America this year will be twenty-one times those assembled in 1932. The fortieth anniversary of diesel power in the United States will be commemorated this week.

Remember?

Interest manifested in wildcat showings is reminiscent of early Mid-Continent days.

Magnanimity

Foreign oil men marvel at the speed with which American producers drill wells to hold down the price of our oil.

Detour

Unable to tax motorists off the highways a Texas bill proposes to crowd them off by permitting drilling.

How Long?

How long can the oil industry afford to take crude oil out of storage in order to reach the theoretical "economic limit"? Stocks have been drawn upon for six years.

Recovery

Natural gasoline prices are beating their way back in a healthful manner. Naturals are now in season and new wet-gas fields are scarce.

Self Regulation

As the cost of manufacturing higher octane gasoline is felt refiners will avoid storing much of it.

Taking Gas

Natural gas will be used in thousands more Michigan and southeastern Pennsylvania homes next year as the result of the twenty million dollar pipe line expansion program just announced.

Contrast

Skyline pictures of Oklahoma City now and eight years ago show what an important oil field means to civic progress.

Opposites

Rumors of higher prices for crude oil and efforts to increase state allowables during winter months do not mix well.

Bologna

Two hundred miles on a gallon of gasoline will prove to be press agent science when the facts of that secret Canadian road test are known.

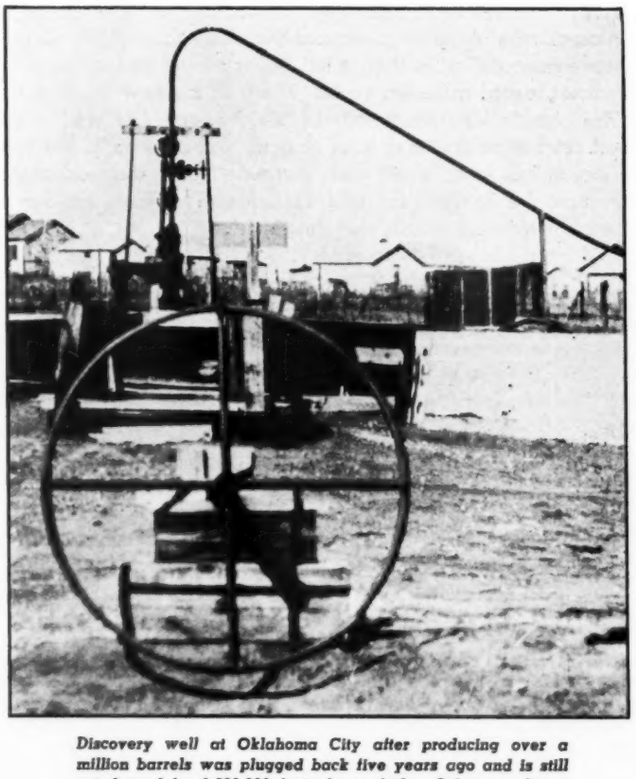
Symptom

To be listed among the indications of improved conditions is the ability of independent operators to attend conventions once more.

Sure Sign

A new field has reached a settled basis when operators start searching for deeper sands.

PUT CAPITAL ON OIL MAP



Discovery well at Oklahoma City after producing over a million barrels was plugged back five years ago and is still rated good for 3,500,000 feet of gas daily. A bronze plaque will be placed at the well Friday

$20,000,000 Expansions Announced by Pipe Lines

By H. STANLEY NORMAN

NEW YORK, Dec. 1.—Expenditure of $20,000,000 or more for expansion of its facilities in and from the Texas Panhandle to Detroit, Mich., is planned in 1937 by Panhandle Eastern Pipe Line Co. Additional pumping stations and loops to the existing 24-, 22- and 20-inch line from the Panhandle to Detroit will be the major construction project with smaller amounts budgeted for extending delivery point facilities. The main line loops will be constructed in accordance with a projected view of eventually paralleling the entire trunk system.

Plans for making the outlay in 1937 were announced in New York by J. D. Creveling, president of the Panhandle Eastern since June 16. Double present deliveries of 40,000,000 feet per day to Detroit City Gas Co. and corresponding increases to other distributing concerns along the trunk line route are contemplated in the building program. Detroit Gas Co. is said by Mr. Creveling to be planning consumption of 90,000,000 feet per day next year whereas the current deliveries to that distribution system average about 40,000,000 feet daily. The company did not anticipate Detroit's requirements would reach the indicated 1937 rate until at least 1941 when the original line was constructed.

EXTENSION IN MICHIGAN

A subsidiary of Commonwealth & Southern Corp., distributing gas in other parts of Michigan, is prepared to increase its purchases from Panhandle Eastern by 20,000,000 feet daily, Mr. Creveling said. Territory served in Missouri, Illinois and Indiana is also seeking additional natural gas through some former Insull units and the Pierce utility properties.

Mr. Creveling estimates that 1937 business available to Panhandle Eastern will be approximately 400,000,000 feet daily and the company is preparing to meet the anticipated demand.

In financing the construction program, Panhandle Eastern proposes to enter the capital market for approximately $40,000,000. The plan calls for refunding of $17,800,000 of 6 per cent bonds. About $3,300,000 of the 6s are in hands of the public and $14,500,000 in bonds are held by three insurance companies. Insurance companies acquired the bonds recently from Columbia Gas & Electric Co.

In addition, Panhandle Eastern plans to offer 80,000 shares of its common stock to holders of Missouri-Kansas Pipe Line Co. equalizing their voting rights with Columbia Oil & Gasoline Co., which now owns one-half of the outstanding common shares.

Panhandle Eastern draws the bulk of its present load of 110,000,000 feet daily from Moore and Hutchinson counties in the Texas Panhandle. The trunk line originates at Dumas, Moore County, crosses the narrow "handle" of Oklahoma, passes through Kansas and enters Missouri at Freeman. Distributing arteries branch in both directions from the trunk system through Missouri, Illinois and Indiana. At Anderson, Ind., Columbia Gas & Electric Co. has an 18-inch line connecting with the Panhandle Eastern trunk system. Columbia Gas & Electric interests distribute gas in Ohio, West Virginia, Virginia, Pennsylvania, New York and New Jersey.

ANNOUNCER.—J. D. Creveling, president, Panhandle Eastern Pipe Line Company

COLUMBIA EXPANSION

Almost simultaneously with Panhandle Eastern's expansion program announcement, Columbia Gas & Electric Co. and affiliated interests revealed plans to organize Pennsylvania Gas Transmission Corp. to supply gas throughout southeastern Pennsylvania. Columbia and affiliates started advertising Monday throughout southeastern Pennsylvania a proposal to petition the governor for permission to incorporate the Pennsylvania Gas Transmission Corp. State laws require three weeks' advance advertising of proposals to create new companies.

At the same time, United Gas Improvement Co. filed with the Pennsylvania Public Service Commission a proposed schedule of thermal rates for natural gas to be supplied by affiliated companies serving Harrisburg, Lebanon, Reading, Allentown and Bethlehem through connections with the Columbia system.

The proposal includes use of the entire capacity of the 420-mile 26-inch Atlantic Seaboard Corp. line running from Kentucky to Pennsylvania through Virginia, West Virginia and Maryland. Columbia Gas & Electric owns 70 per cent and Standard Oil Co. of New Jersey 30 per cent of the Atlantic Seaboard Corp.

Standard of New Jersey is to own all stock of the new Pennsylvania Gas Transmission Corp., in the same manner it now controls separate affiliates in the various states traversed by the Atlantic Seaboard line.

Under plans to loop the Panhandle Eastern trunk line from the Texas Panhandle and the connection which now exists at Anderson, Ind., with the Columbia system, it will be possible to serve the entire northeastern third of the country from the Texas reserve.

Natural gas sales by the Panhandle System in the three months ended September 30, last, were 5,157,766,000 feet, compared with 3,609,904,000 feet a year ago. Sales for the nine months were 17,112,734,000 feet, against 11,192,630,000 feet in the corresponding 1935 period.

ALIFORNIANS COME.—Ed McAdams, Los Angeles; A. J. Crites, achor Oil Co., Maricopa; Rush M. Blodgett, vice president, Oil Producers Agency of California, Los Angeles

I. P. A. A. Holds T

the Authority to

By C. O. WILLSON

OKLAHOMA CITY, Dec. 1.—The Independent Petroleum Association of America today placed the solution of the problem of excessive drilling in proven fields on the front doorstep of the industry and the state regulatory bodies where they can take it or leave it.

The association in the closing session of its seventh annual meeting approved the report of an investigating committee which in effect says that the several oil-producing states either have or can secure through passage of the proper legislation, the authority needed to end unnecessary drilling. The action apparently is the association's challenge to those who agree that excessive drilling in recent months is a threat to continued stability in the industry but who have either side-stepped the matter of a solution or have assumed a hopeless attitude that nothing can be done about it.

The approved report not only says that drilling can be legally controlled through equitable regulations based on acreage or well spacing, but it also questions the legality of present proration efforts. It points out in this connection the legal weakness of a plan which by basing allowables on number of wells has forced operators to make expenditures which were not necessary to assure an economic and efficient recovery of oil.

THOMPSON VIEWPOINT

Operators and attorneys familiar with the problem with which the industry is confronted have not had time to study the recommendations of the committee. It is apparent, however, that the suggested plan of control will not have the support of Col. E. O. Thompson, chairman of the Texas Railroad Commission. As head of the regulatory body of Texas, in which the problem of well spacing centers, and as chairman of the Interstate Oil Compact Commission, Colonel Thompson occupies the most important position in the industry in determining immediate policies in regard to control of drilling.

COL. E. O. THOMPSON

Chairman, Interstate Oil Compact Commission, and Texas Railroad Commission:

"The oil states compact commission can not under the treaty or under the law limit the drilling of oil wells. If too many wells are being drilled, that is a matter to be decided upon by those who are drilling them. I think I may be pardoned for this observation: That some of the very people who have talked long and loud about too much drilling being done are doing a right smart of drilling themselves."

In an address last night on "What the Oil States Compact Can Do," Colonel Thompson again made known his contention that the compact and state bodies have no legal authority in regard to regulation of oil operations except those concerned with the conservation of oil and gas.

"To give you a clear illustration of what I mean," Colonel Thompson said in direct reference to the problem of excessive drilling, "I cite you to the effort that has been made in Texas and is constantly being made before the Texas Railroad Commission to get the commission of Texas to give more and more consideration with the view that money expenditures in the drilling of wells could be saved to the operators. The purpose of conservation measures is not to save money to those who wish to drill. The purpose of conservation measures is to prevent waste in the production of oil and gas with the aim in view that the greatest ultimate amount of oil and gas shall be recovered from the sands for the benefit of mankind. It is not the privilege of regulatory authorities to make rules or regulations to prevent people from spending their money foolishly, if they like. Our sole duty is strictly limited by statute, court decision and good public policy to the actual prevention of physical waste in the production of oil and gas."

The action taken in offering a solution to this pressing threat of overproduction brought about by proration schedules in several states which place a premium on well drilling, overshadowed in importance all other developments in the two-day annual meeting. Indicative of the interest in this and other features of the association's program for the industry, the registration was the heaviest in its history.

A regular meeting of the Interstate Oil Compact Commission and the celebration of this city in connection with the eighth anniversary of the discovery of the Oklahoma City field, centering in a petroleum pageant, aided in bringing together several hundred operators with all of the oil-producing states represented. Axtell J. Byles, president, and W. R. Boyd, executive vice president of the American Petroleum Institute, and Baird H. Markham, director of the American Petroleum Industries Committee, were in attendance at the meetings.

OFFICERS REELECTED

Charles B. Roeser, independent operator of Fort Worth, was reelected president of the association, which has just closed its year of greatest growth. The active management of the association's activities will continue under the direction of H. B. Fell, executive vice president; Russell N. Brown, general counsel, with headquarters in Washington, D. C.; T. J. Steuart, assistant to the president; and C. E. Buchner, executive manager. The annual meeting next year will be held in Tulsa.

In addition to plans to continue its efforts to secure the cooperation of operators and the states in ending the menace of "too much" drilling, the association during the two days again indicated its support of the five-point program of a year ago which contains features around which the association was organized in 1929. The association favors federal legislation which will definitely limit the importation of the crude oil and its products. It will attempt to secure the necessary legislation in the coming session of congress. It will also support legislation for the continuance of the Connally "hot oil" act and the extension of the Interstate Oil Compact. Other features of its program include orderly withdrawals from crude storage; balancing supply with demand through action of states; unit development of pools through agreement of operators and provision for voluntary agreements within the industry, subject to approval by federal agencies.

COMMITTEE REPORT

The report of a subcommittee on "Unnecessary and Excessive Drilling" was brought to the attention of the membership by the general committee on "Balance of Supply With Demand," composed of Col. H. B. Fell, chairman; J. S. Bridwell and E. B. Shawyer.

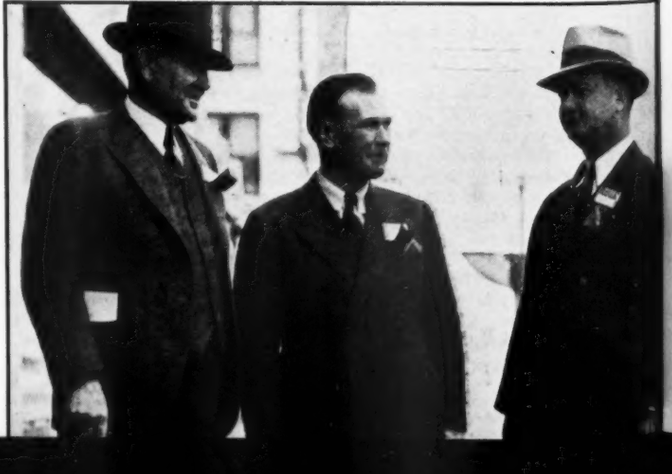
The only change made by the membership in the committee's report was contained in the following amendment: "That in adopting this report we are not making any specific recommendation as to how this report shall be made applicable, if at all.

CHARLES F. ROESER

President, Independent Petroleum Association of America:

"The coming year will be full of tasks which we must meet. The 'hot oil' bill, the excise taxes on imported foreign petroleum, the interstate oil compact, all expire in 1937. If we want them renewed we will have to work for them. That means that each of us will have to do his own share. The new Congress will write a new revenue bill. We must see that we are treated fairly in that bill. Our depletion and depreciation allowances must be continued. We must work for the elimination of the federal sales tax on gasoline. If we do not, it may be increased. We want the excise taxes increased so far as they affect crude petroleum and gas and fuel oil. We want an import tax of $2.00 a ton on foreign asphalt. Beside these, there will be the unforeseen measures which will doubtless be proposed, as always affecting our industry. We must equip ourselves to meet all of these situations."

LONE STAR TRIO.—J. L. Collins, Wheelock and Collins, Corsicana; Bryan W. Payne, Dallas, and R. L. Wheelock, Wheelock and Collins



That States Have Control Drilling

LOOKING PLEASANT.—James Gardner, Tulsa; Frank Buttram, homa City, and Leon F. Russ, Russ Petroleum Co., Dallas, T

to pools which have not been fully developed or have been partially developed."

The subcommittee of nine was composed of three engineers, three lawyers and three operators as follows: Engineers—Don R. Knowlton, Phillips Petroleum Co., Bartlesville, Okla.; C. E. Yeager, Texas Pacific Coal & Oil Co., Fort Worth, Tex.; J. R. Pemberton, oil umpire, Los Angeles, Calif. Lawyers—W. P. Z. German, Skelly Oil Co., Tulsa; Villard Martin, Tulsa; Robert E. Hardwicke, of Hardwicke, Brelsford & Cheek, Fort Worth, Tex., chairman. Operators—A. S. Ritchie, McPherson Drilling Co., Wichita, Kans.; C. P. McGaha, Fain-McGaha Oil Corp., Wichita Falls, Tex.; Van S. Welch, Flynn, Welch & Yates, Inc., Artesia, N. Mex.

WEST AND EAST MEET.—Joe Cromwell, Oklahoma City, and Ralph Zook, Bradford, Pa.

This subcommittee, some of whose members have made studies of drilling and allied problems of the industry over a period of several years, prepared the report which deals with engineering, economic and legal phases of excessive drilling. It was made clear in the beginning of the report that the plan of restricting drilling operations was confined to proven areas and not "wildcat" or exploratory programs which were considered necessary in order that the industry have new reserves to offset those which are constantly being depleted.

The report explains present conditions in regard to drilling with which the industry is generally familiar. It assumes that the plan of having top allowables by states which are the sum of the fields' allowables in those states will continue so that the problem has to be attacked with that practice in mind.

The report finds that the practice of basing allowables largely on the number of wells has brought about a situation in which emphasis has been placed on expanding drilling operations in proven territories without regard to whether they were necessary to assure an economic and efficient drainage of the proven areas. As wells have increased in number the allowable per well has decreased so that if the trend is not changed all wells presently will be reduced to their marginal minimums. This means operating losses in many cases.

Some of the numerous examples of the results of this inequitable and uneconomic situation are pointed to in the report. Data are offered which show that the per well allowable in Texas has steadily decreased so that it is now approximately 50 per cent of what it was three years ago for the non-marginal wells. The economic phases are emphasized by reference to the development of East Texas field where it is estimated that 12,500 unnecessary wells have been drilled, representing an expenditure of $162,000,000. Based on an average allowable production per year for that field of 159,000,000 bbls. it is pointed out that if the unnecessary wells had not been drilled the saving of $162,000,000 "would be equivalent so far as income to operators is concerned, to receiving more than $2 a barrel instead of the $1 actually received during the entire year of 1935." A similar situation is referred to in the case of the Oklahoma City field development.

DEFINITE RECOMMENDATIONS

Passing to the definite plan of the subcommittee regarding the practical and legal solution of this problem, the report makes the following recommendation:

"While it is often said that, under the statutes in some states, the administrative body is authorized to regulate drilling, production, etc., only to prevent physical waste, surely it does not follow that the regulatory body has the power by its orders, directly or indirectly, to increase unnecessarily the cost of production; and it does not follow that the administrative body has the power to settle the question of well spacing, drainage area, proration unit, and method of allowable. In most instances, however, an agreement of all operators can not be obtained, so, for all practical purposes, the remedy for unnecessary or excessive drilling rests in the action of the administrative body which fixes the method of allocation for each field, or in the courts should the method of allocation fail to meet legal tests.

"Unnecessary and excessive drilling will almost automatically cease, and reasonable, uniform drilling will almost automatically follow, whenever the method of allocation, as between operators in a field, is based upon a proration unit comprising not less than an area which one well will efficiently and economically drain, and which then provides for distributing the allowable in a manner to take into account the differences in the recoverable oil in the various productive units in the field. A somewhat similar result is reached by a uniform spacing program with the spacing unit fixed at approximately the same size as the proration or drainage unit above mentioned, even though distribution be on a per well potential basis; provided, no exceptions are given to the spacing rule, or if there should be such exceptions, then with the allowable for the well adjusted in order to prevent discrimination against other tracts.

"If it be assumed that one well will efficiently and economically drain x acres in a particular field, it seems to be reasonable to assume that the administrative body can not legally enforce an order which in practical effect requires the drilling of more than one well on an x-acre tract in order to enable the operator to obtain a proper allowable, being one which gives the operator his fair share of the allowable for the field as the owner of an x-acre tract with a well on it.

"Surely an order of an administrative board could be set aside which required the use of gold pipe or silver derricks, for such an order would have no other effect than to cause unnecessary expense to the operator. It seems reasonable to conclude, therefore, that, where one well will efficiently and economically drain x acres, an order of the regulatory body which leaves the operators no alternative but to drill more than one well to

H. B. FELL

Executive Vice President, I.P.A.A:

"Throughout the years we have stressed three outstanding things: (1) That the domestic petroleum industry must unite in an organization, if they hope to continue successfully in business; (2) that the organization thus formed must have a clear-cut, definite program, based upon sound political and economic principles, and (3) that this program must be put into effect through the exertion of the influence of all and the personal service of as many as can give of their time."

C. M. BOGGS

President, Western Petroleum Refiners Association:

"The refiner has learned that he can no longer profit at the expense of the producer when the price of crude is low, while on his part, the producer knows there can be no health and prosperity in his branch of the industry when the refiner is selling his products below cost."

RUSSELL B. BROWN

General Counsel I.P.A.A.:

"Many of the results sought by the Independent Petroleum Association of America are now being realized by cooperative effort and not by legislation. Stabilization of the industry; balance of supply with demand; limitation of imports; increased use of domestic asphalt; orderly withdrawals from storage; improvement in orderly development of new pools to avoid waste, both of oil and money, and as a natural result, the maintenance of a better price for crude, have characterized the industry's record for 1936. While legislation intended to develop and make secure many of these results was not adopted, the fact that this legislation was proposed and that it was being actively supported by large and influential groups within the industry is generally recognized as having been a determining factor in their accomplishment. This present excellent condition of the industry is due to these elements."

A. J. CRITES

Anchor Oil Co., Maricopa, Calif.:

"I believe that the threat of increased importations of a low-cost product is what actually depresses the market, and, conversely, by restricting importations of the low-cost product, the market tends to stabilize itself at the domestic cost level. If this be true, and I believe it is, a restriction of imports is perhaps the most important part of a constructive program for the domestic oil industry. Legislation should be advocated to bring about this restriction."

each x acres if they are to obtain their proper respective shares of the allowable production for the field, would be set aside by the courts for the reason that it causes unnecessary expense.

"Finally, let it be repeated that it seems reasonable to say that the administrative body is not authorized to make an order which in practical

CAPITAL HOST.—Frank Buttram, chairman of Oklahoma City Chamber of Commerce committee staging the petroleum pageant and week's celebration of the eighth anniversary of the field, did a fine job. Since the discovery over 1,000 wells have been drilled in the field which has produced 350,000,000 bbls. of oil

effect requires the drilling of a well where the income from the well will not pay for the expense of drilling and operation, and such drilling is not reasonably necessary for the recovery of the oil under the tract.

BAIRD H. MARKHAM

Director, American Petroleum Industries Committee:

"This nation came into being primarily as the result of a protest against what was regarded by the colonies as unjust and discriminatory taxation. There can be no equality when any industry, or any commodity or any group of citizens is singled out to bear more than a fair share of the cost of government. There is no better place to protest this discrimination than in Oklahoma, and in Texas, which owe so much to this great industry."

"It seems to be wholly immaterial that, in determining the size of the unit, economic conditions or economic waste may be involved, and, for that matter, none of the conservation statutes in any state prohibits, as some seem to think, the consideration of economic waste or economic conditions in any manner whatsoever."

The committee's report explained that no special study had been made of the conservation laws of the several states with the view of determining what additional legislation, if any, would be needed in order to control drilling operations in proven fields. Reference was made to provisions of the New Mexico Act adopted in 1935 which provides for pooling of properties and other features of a regulatory policy which aims to restrict drilling in an area to efficient and economical requirements. Reference was also made to the act passed last year by the Oklahoma legislature which provides for well spacing and for pooling of tracts in order to conform to uniform spacing. The committee emphasized its contention that the matter of taking care of owners of small tracts in a proven area, usually offered as an uncontrollable cause of excessive drilling, is not an unsurmountable barrier to legal control where voluntary pooling arrangements are not possible.

SEVERAL ADDRESSES

The two-day meeting preceded with sessions on Sunday of the association's important committees was in the nature of a symposium covering present conditions in the industry. All of the executive officers made reports covering work of the past year and outlined plans for the next 12 months.

J. D. COLLETT

President, Mid-Continent Oil & Gas Association:

"One of the smaller companies has spent about $300,000 on new wells this year its total allowable today is only 1 barrel above what it was this time last year, a pretty high price to pay for increased allowable. An independent operator in Texas told me his total for new wells this year was just below $250,000 and his total allowable at present is 100 barrels less than a year ago. . . . If we keep up the gait we are now going it means financial disaster to the small operator at an early date. For the major companies with extensive cash reserves, the poison will work more gradually—but it is the same poison and will surely take its toll."

J. D. Collett, president of the Mid-Continent Oil and Gas Association, at luncheon Monday, explained the benefits that have accrued to the industry from the I.P.A.A.'s five-point program adopted last year. Congressman Wesley E. Disney of Tulsa explained the work constantly necessary to continue the 27½ per cent depletion allowance for oil producers in income tax reports to the revenue department.

CRITES PRESENTS DATA

A. J. Crites, of the Anchor Oil Co., Maricopa, Calif., presented additional data showing the necessity of restricting imports for the protection of the domestic oil industry. Baird H. Markham warned that taxes on the oil industry were approaching the point where they were becoming "destructively excessive" and legislation "unduly oppressive."

Virgil R. D. Kirkham of Saginaw, Mich., showed the essentially close relationship between stabilization and conservation. "Now is the time for the independent to discard his more colorful role of the opportunist and take up instead the task of getting for his sphere of operations a revision of the fundamental oil and gas laws to conform with modern needs of stabilization." Mr. Kirkham said, "the major integrated company has already learned its lesson of cooperation, coordination and unification, and the next lesson for the independent is to profit by the experience of such a company."

VIRGIL R. D. KIRKHAM

Economic Geologist, Saginaw, Mich.:

"Stabilization will be best served by the development of oil pools as units. If this is not done competitive pools in which the independent producer is operating will soon be exhausted, and much more quickly than similar pools in which the acreage is held by two or three major companies operating under a unit program."

Survey of Central Michigan

MUSKEGON, Mich., Nov. 30.—An auction of leases on about 90,000 acres of state-owned lands in 12 Michigan counties will be offered at Lansing, Dec. 3 and 4.

Included are leases in the following counties: Arenac, 5,516 acres; Bay, 3,231; Clare, 1,323; Gladwin, 18,506; Isabella, 339; Midland, 3,956; Montmorency, 6,041; Newaygo, 160; Ogemaw, 8,201; Osceola, 554; Otsego, 12,142, and Roscommon, 29,930 acres.

The Michigan State Administrative Board has appropriated $2,500 to meet the state's share of a geological survey to determine the possibility of oil-bearing formations elsewhere in the central part of the state. The survey will be conducted in cooperation with the United States Geological Survey. The territory will cover portions of Ingham, Clinton and Shiawassee counties in south central Michigan.

Security Act Protest

NEW YORK, Nov. 30.—Texas Corp. is filing a protest against the Social Security Act with its reports, offices of the company said today, describing the move as "purely a precautionary legal formality."

A spokesman for the company explained the step as follows:

"The company is not protesting nor in any way opposed to the Social Security Act, but our attorneys are of the opinion that if the act is declared unconstitutional the only way to secure refunds of monies paid in is to file protest now.

"The purpose of the protest, which is purely a precautionary legal formality, is to protect the company's right to recover payments made by it in the event the act is declared unconstitutional by the U. S. Supreme Court," he said.

ENCORED.—Charles F. Roeser, reelected president of the I.P.A.A.

ATTENTIVE OFFICIALS AT RODESSA HEARING.—David McConnell, field manager, Shreveport district, Conservation Department; W. F. Chisholm, engineer, Conservation Department, Shreveport; G. W. Holland, chairman of Petroleum Conservation Division, U. S. Department of the Interior; F. E. Zimmer, court reporter; Governor Richard W. Leche; George M. Wallace, executive counsel; William G. Rankin, Louisiana Commissioner of Conservation; and Dr. J. A. Shaw, Director of Minerals Division, Department of Conservation

Differences of Opinion Aired at Hearing on the Rodessa Area

By MITCHELL TUCKER

SHREVEPORT, La., Nov. 30.—Governor Richard W. Leche of Louisiana, presiding over the second public hearing on Rodessa, held at Baton Rouge November 27, said: "We are going to protect the interests of the state. If we have to hurt a few, we will have to do it, and, if we have to hurt many, we will have to do it; there are some 200 persons interested in the Rodessa field compared to several million people in Louisiana."

The hearing was attended by 75 independent and major operators, and interested parties. G. W. Holland, director of the petroleum conservation division of the United States department of the interior, was present. No authorized representative from the Texas Railroad Commission appeared and consideration was centered upon the Louisiana side only. Difference of opinion as to manner of well completion, gas-oil ratios, factors in allocation, etc., characterized testimony throughout the day. Voluminous technical data assembled in the field were presented to support each point of view.

The newly organized Louisiana Independent Oil and Gas Association, Inc., was represented by engineering and legal counsel, as well as a large representation of membership. They introduced testimony which outlined the structure, manner of completions, and recommended remedial measures.

The Rodessa field differs from all others in that four distinct and separate producing zones are present, all of Lower Glen Rose (Trinity) age. The two upper zones (Hill and Gloyd) carry gas only, with the exception of a few isolated cases in the northeast edge of the field, while the two lower zones (Dees and Young, in some cases the Young being referred to as Upper and Lower Young) carry oil. Some geologists are prone to consider the Dees and Young as one oil reservoir.

The presence of these distinct zones, and their occurrence in the sharp dipping beds to the north, has resulted in three classifications of wells at Rodessa, gas, distillate and oil wells. Heretofore no real attempt has been made to differentiate between them, but lines of demarcation are slowly being drawn.

WELL CLASSIFICATION

The first group of wells produce only gas, and are situated in the southern portion of the field (along the peak of the structure). There are 20 wells of this class, the majority drilled before discovery of oil about one and one-half years ago.

The second group of wells occur along the approximate center of the field, and they produce gas, distillate and some oil. They are tentatively classed as "distillate" wells. It has been suggested when wells of this type produce an oil-distillate mixture exceeding 50 degrees A.P.I. gravity they be classified as distillate wells, and when they produce a mixture having a gravity below that figure they be classed as oil wells. There are 56 such wells on the Louisiana side and none in Texas.

Those wells located low structurally, on the northern flank, favorably situated between the gas-oil and oil-water contact, produce oil, and in some cases considerable gas. This group may properly be classified as oil wells.

Testimony of the Independent Association pointed out that the reason for the high gas-oil ratios in the distillate and oil wells is due largely to the manner of well completions, as 30 or more of the oil wells are known to have a large amount of open hole, exposing the entire Hill, Gloyd, Dees and Young sections. This exposure of the upper gas members makes possible the normal migration of gas to the Young oil zone (having a known lower pressure than the gas bearing horizons). After entering the oil producing zone (Young) the normal migration is up structurally, creating excessive ratios of gas to oil in wells along the oil-gas contact line, which without exception are exposed to only the one member, the Young sand. Furthermore, the gas wells highest on structure are exposed to all four zones, and as a result gas from the common oil reservoir is being produced through them, and in some cases wasted, depriving the oil sand of its motivating energy. Ultimate recovery may possibly be lessened by this irregularity of well completions at critical structural points. It was forcefully brought out that

ALERT.—Rodessa operators show lively interest at Baton Rouge hearing

this situation could not have occurred if wells downdip were properly cased to seal off all upper formations.

After summarizing the situation, the Independent group submitted the following suggested order for consideration by the Department of Conservation:

1. All wells in Rodessa field, whether oil wells or distillate wells, producing from the now known oil producing formation shall be considered as producing from the same common source of supply and there be no discrimination as between wells in said field. Any well producing products up to and including 50 degrees A.P.I. gravity, corrected, should be designated as oil wells and all wells producing products above 50 degrees A.P.I. gravity, corrected, shall be designated as distillate wells. The gas-oil ratio of each well shall be kept as low as possible.

2. Each oil well shall be permitted to produce a maximum of 3,000,000 feet of gas per day, provided oil production does not exceed allowable figure.

3. All distillate wells shall be permitted to produce a maximum of 6,000,000 feet of gas per day, provided amount of production does not exceed allowable figure.

4. In making gas-oil ratio tests, all wells shall be tested upon the same basis agreeable to rules and regulations to be promulgated by the commissioner of conservation.

5. Any well producing gas only from the present known oil reservoir shall be immediately plugged back and such oil-bearing formation sealed off.

6. No well shall be drilled through or below any oil, gas or water stratum without sealing off such stratum or the contents thereof after passing through, by casing and cementing, regardless of volume or thickness of sand, except the one stratum from which the operator elects to produce. All wells in said field now being operated in violation of this rule shall be shut in immediately until the provisions hereof are complied with.

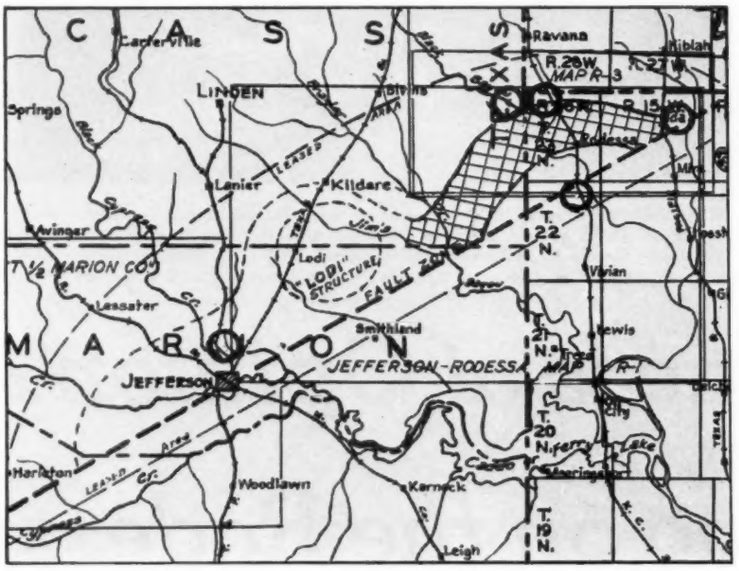
Those who opposed acreage as a factor in allocation stated that as it was not invoked from the beginning, it would be an unfair restriction at this time. Louisiana officials have announced dates for immediate hearings on the newly discovered Sibley and Sligo oil fields in order that these pools may "get off to the right start."

Other recommendations were made individually by the Rodessa operators committee, Tide Water Oil Co., Arkansas-Louisiana Gas Co., Phillips Petroleum Co., Standard Oil Co. of Louisiana, United Gas Public Service Co., and Magnolia Petroleum Co. W. H. Bell, chairman of the engineering subcommittee of the Rodessa operators group, submitted recommendations on all phases except gas-oil ratios and method of allocation, stating operators could not agree upon these points. W. A. Kraus, proration engineer for Phillips Petroleum Co., advocated an allocation of production upon a 50 per cent acreage and 50 per cent bottom-hole pressure basis, with a correction factor for gas-oil ratios above 5,000 to 1. Arkansas-Louisiana Gas Co. recommendation was practically the same, except in suggested a ratio of 10,000 to 1 before correction factor was applied. Standard Oil Co. recommendation was the same except for the correction factor, which was suggested as 2,000 to 1. Magnolia Petroleum and United Gas recommended allocation be based upon 75 per cent acreage and 25 per cent on bottom-hole pressure, with a correction factor on all wells exceeding the 2,000-to-1 ratio. Each operator presented substantiating data.

Governor Leche thanked operators for their cooperation and said the recommendations would be carefully considered, and the most equitable order possible would issue. He added it might not be possible to invoke the order for one or two weeks, in view of the detailed study necessary to all phases of the problem, and in the meantime the present allocation order would remain in effect.

Total wells in the entire field number 452, of which 344 are in Louisiana and 108 in Texas. The Louisiana wells are divided, 20 gas wells, 56 distillate wells, and 268 oil wells. All wells in the Texas side are classified as oil wells. There are 24 operations in Louisiana and 62 in Texas. Eight wells are flowing by gas lift, one pumping, four preparing to go to pumping, and the remainder flowing naturally.

Accumulated production now totals approximately 21,500,000 bbls., approximately 18,500,000 from Louisiana and 3,000,000 from Texas wells. Estimates of total ultimate recovery from the entire field range from 150,000,000 to 200,000,000 bbls. Most estimates are predicated upon a basis of 800 bbls. per acre foot, sand thickness varying from a maximum of 53 feet at point of gas-oil contact, and minimum of 3 to 5 feet on the northern flank. Saturated sand thickness on the Texas side is somewhat less than in the prolific section of the Louisiana reservoir; therefore, all estimated recoveries per acre are less in Texas than Louisiana. Indicated life of the field is given as from 8 to 12 years, depending largely upon lifting costs during the latter stages which will either shorten or lengthen economic life.



Hatched portion indicates approximate proven area in Rodessa sector; circled points approximate location of important extension wells now drilling.—(Walter E. Wylie, Maps, Shreveport)

The daily production for the field reached an all-time peak during the week ending November 24, producing an average of 78,469 bbls. daily. Production and number of wells, by companies and by states, for this period is given below:

Company—	No. wells La.	Tex.	Total	Dly. av. prod. La.	Tex.	Total
American Liberty..	3	12	15	682	2,776	3,458
Ark.-La. Gas	27	0	27	4,377	0	4,379
Magnolia Pet.	32	28	60	6,391	5,403	11,794
Tide Water	13	2	15	1,494	290	1,784
Phillips Pet.	23	3	26	4,584	513	5,097
Standard Oil of La.	53	0	53	10,694	0	10,694
United Gas	113	30	143	21,048	5,555	26,603
Others	60	33	93	7,437	7,223	14,660
Total	324	108	432	56,709	21,760	78,469

Sixty Louisiana wells are now producing water, 29 from 1 to 5 per cent; 10 from 5 to 15 per cent; 4 from 15 to 30 per cent; 8 from 30 to 50 per cent; 1 from 50 to 75 per cent and 5 in excess of 75 per cent. In Texas only eight wells are producing water, with a maximum water percentage of four. The majority of Louisiana water is from edge encroachment along the northern flank, while a few wells improperly completed are making bottom-hole water. Total volume of water from that side of the field approximates 2,750 bbls. per day.

Total accumulated metered natural gas production from the Louisiana side now amounts to approximately 85,000,000,000 feet, while total estimated gas blown to the air amounts to 233,000,000,000 feet. Initial bottom-hole pressure was about 2,800 pounds, and with the present weighted average of 1,967 pounds, and an accumulated withdrawal of 318,000,000,000 feet, a recovery of about 381,000,000 feet per pound drop in pressure is indicated. Gas wastage in Texas has been a great deal less per well, largely due to manner of well completion. These wells were drilled later in the life of the field, and profited from all the experience gained in developing the Louisiana side. As a result, only the Young sand is exposed in the majority of Texas wells. Also, the allowable ratio of gas to oil there is 2,000 to 1, in contrast to Louisiana present allowable of 12,500 to 1 for oil wells and 25,000 to 1 for distillate wells.

At the present time Louisiana oil wells exhibit an average gas-oil ratio of 4,868 to 1; distillate wells 51,352 to 1; while the average for both classifications is 9,704 to 1. The number of wells falling in the various ratio groups follows: 98 wells with maximum ratio of 2,222 to 1; 47 wells from that point to maximum of 4,444 to 1; 78 wells to maximum of 8,888 to 1; 31 wells to a maximum of 12,888 to 1; 12 wells with a maximum of 13,333 to 1; and 53 wells with maximum of 26,666 to 1. The most recent gas-oil ratio survey made of 66 Texas wells showed an average of 642 feet of gas to a barrel of oil.

Weighted bottom-hole pressure has declined on the Louisiana side approximately 840 pounds from the original pressure of about 2,800 pounds. The September survey made by the Rodessa Operators Committee engineering subcommittee showed the weighted average to be 2,080 pounds, or a decline of 82 pounds during the last 30-day period. The October survey indicated a weighted average of 2,009 pounds, or 71 pounds decline during the 31-day period. Texas authorities are now completing their bi-monthly survey covering October and November. Their survey at the end of September showed a weighted average for 42 wells of 2,470 pounds.

At present it cannot be said that the productive limits of the Rodessa field has been defined in any direction, as there are important extension wells either drilling or in process of testing to the north, south, east and west of production. The regional map shows approximate location of each of these outpost wells. To the west Holcomb & Thomason No. 1 Lizzie Henderson is drilling below 3,000 feet, regarded as a wildcat 13 miles southwest of production, although geophysical surveys indicate continuous structure to this point. To the north Bay Oil Co. No. 1 G. E. Parker, Greenham Survey, Cass County, Texas, and J. Edward Jones No. 1 M. Z. Sharp, SW SE section 4-23-16, Louisiana, are testing possibilities of the parallel fault 2 miles north of production, and both wells show promise of making commercial wells. To the east Idessa Oil Co. No. 1 D. K. Sumner, NW SW SE section 10-23-15, is testing at a total depth of 6,197 feet. A producer here would extend productive limits three-quarters of a mile eastward. To the south of the known Rodessa fault feature R. W. Norton is drilling No. 1 Payne, SE cor. section 27-23-16, as a 10,000-foot test of Travis Peak and deeper beds.

Among those present were: J. R. McWilliams and O. C. Nonweiler, Standard Oil Co. of Louisiana; N. C. McGowen, Walter H. Spears, Fred R. Schroeder and T. W. Johnson, United Gas Public Service Co.; P. C. Murphy, R. W. Stewart, W. A. Krauss and R. K. Batten, Phillips Petroleum Co.; C. N. Black, Magnolia Petroleum Co.; J. G. Puterbaugh and M. C. Scheble, McAlester Fuel Co.; F. S. Kelly, Jr. and R. O. Garrett, Arkansas-Louisiana Gas Co.; W. C. Ferrall, Lion Oil Refining Co.; T. A. Hall and George L. Nye, Tide Water Oil Co.; W. B. Lambert, Shell Petroleum Co.; Harry Norris, Sinclair Prairie Oil Co., and W. A. Tharpe, M. H. Marr, R. A. Bristol, G. M. Cash, J. P. Wallace, W. F. Lacy, H. M. Harrell, M. W. Grimm, W E. Hall, A. B. Trion, W. P. Prentiss, J. Edward Jones, W. J. Hunter, C. H. Lyons, E. F. Neely and J. P. Evans, independent producers in the Rodessa district.

Washington's Views of Legislation on Oil in Coming Congress

WASHINGTON, D. C., Dec. 1.—Enactment of major legislation directed specifically at the oil industry in the new congress appears improbable. While the possibility of federal production control still lurks in the distance, support of such legislation has declined so rapidly during the past 18 months its enactment would be a legislative miracle.

At this time, probable legislation affecting the oil industry directly will, it appears, be confined to extension of the interstate compact authorization act and extension and slight technical modification, perhaps, of the Connally hot oil act.

In view of the president's determination not to open the tax question at the coming session, the drive to cut the federal gasoline tax will of necessity be deferred for another year at least. Similarly, no change in the present depletion allowance provision of the revenue act can be expected.

The only remaining oil legislation is the Disney bill, designed to limit foreign imports of crude and its products, which Representative Wesley E. Disney of Tulsa, who sponsored the measure at the last session, has announced he will reintroduce. Chances of enactment of the bill, which would raise the import tax on crude petroleum from 21 to 42 cents a barrel, impose a levy of $1 per barrel on imported asphalt, and eventually provide for quotas for foreign imports, now appears slim. This view is generally held although the House Ways and Means Committee, shortly before adjournment, favorably reported the measure and it received the enthusiastic support of coal interests and oil labor representatives.

Meanwhile, there is no indication the Thomas-Disney or any other oil control bill will be revived, despite recurring reports that Secretary of Interior Harold L. Ickes is preparing recommendations along this line for submission to congress.

Ickes last week again denied he is preparing any report or recommended legislation. He will draft no suggested measures of this character until he is assured he will be retained as secretary of interior in the new cabinet.

While Ickes position now appears comparatively safe, reports are spreading he will not be in the new cabinet. He has been at odds with several New Dealers close to the president and there is no doubt pressure will be exerted to have him dropped.

In any event, Ickes would never again be oil administrator if one should be created. Dissatisfaction with his reign under the code, coupled with the feeling against him held by the majority of leading oil men, are held certain bars to his ever acting as administrator of the oil industry.

Ickes has made it clear that he still believes in the principle of federal production control and does not feel the state compact method will ever be completely successful. If he is continued as interior secretary, it is possible that he may later resume his efforts to secure federal oil control legislation. His chief obstacle will be lack of support for any such move. Senator Elmer Thomas of Oklahoma, co-author of the last measure of this type, said he is through with oil control bills. "Upon two occasions," he declared, "I have carried the burden of the fight. In neither instance did I receive the necessary cooperation and I do not feel obligated to again sponsor such legislation."

Representative Disney, who joined with Thomas last time, does not feel control legislation should be pressed in congress again for the time being at least. The Texas and California members of the senate and house have always avoided the question.

Although President Roosevelt, in a letter to Chairman Sam Rayburn of the house interstate and foreign commerce committee two years ago, expressed his interest in the legislation, there is reason to feel he has never been personally desirous of securing federal oil control legislation. There is no reason to believe he would initiate such legislation.

Strongest agitation for any legislation directed at the oil industry which may arise during the coming session is expected to originate among the bituminous coal interests. Enactment of a revised Guffey act by congress, now anticipated, may be followed by pleas on the part of the National Coal Association for similar legislation for the oil industry.

The Disney import bill, which in addition to hiking the import taxes on oil, would remove exemptions existing for bunker oil and pave the way for definite limitation of imports through quotas, may again receive approval of the house committee, but its path to enactment will be rocky.

The bill was approved by a majority of the house committee before adjournment only by the narrowest of margins. On the floor, it would meet terrific opposition by Atlantic seaboard interests. Industries in the eastern section are large users of imported fuel oil, and New England members are united in their opposition. Best opinion is it could not muster enough votes in the house for passage there. No attempt has been made to line up support in the senate.

The long fight by the American Petroleum Institute to cut oil taxes, including the federal gasoline taxes, will undoubtedly be stymied through plans not to open the tax question during the session. If a tax bill is brought in, a move will certainly be made to repeal or reduce the federal gasoline tax.

Failure to open the tax question, will insure continuation of the present flat 27½ per cent depletion allowance permitted under existing statutes. The treasury department has persistently fought for repeal of this provision, but representatives from the oil states have been successful in their fight for its retention.

Federal Suit to Discover Deduction Percentage

Three of the largest purchasers of crude oil in the Osage Indian Nation in Oklahoma have been made defendants in a suit brought by the Osage Tribal Council. The Indians, with the backing of Harold L. Ickes, secretary of the interior, will seek judgment against the companies named for millions of dollars, claiming that the defendants bought the royalty oil of the Indians on the basis of 97 per cent of the gross oil purchased. They demand payment for all or a part of the remaining 3 per cent on the royalty oil bought from 1904 to 1930.

The defendant companies are the Carter Oil Co., Sinclair Prairie Oil Marketing Co. and Stanolind Crude Oil Purchasing Co. and their pipe line affiliates, the Oklahoma Pipe Line Co., Sinclair Prairie Pipe Line Co. and Stanolind Pipe Line Co. Other companies are to be similarly sued as soon as the bills can be prepared, including Phillips Petroleum Co., Continental Oil Co., Mid-Continent Petroleum Corp., Empire Oil & Refining Co., Skelly Oil Co., Johnson Oil & Refining Co., Gulf Oil Corp., Texas Corp., Barnsdall Corp. and their pipe line affiliates or subsidaries.

In the first few years of the oil industry the buying and selling of oil was conducted in a haphazard manner. There had been no way found to measure tanks accurately. In the middle sixties James Robinson and William Robinson were the first to see the need of business-like ways of handling the purchase and sale of crude and they worked out a method of computing tank measurements from the first quarter of an inch up to the top of the tank. The Robinson system continued unchanged for nearly 70 years and only recently was subjected to minor revision under the auspices of the American Petroleum Institute. From the first the tank measurements were so made as to account for a small percentage of "basic sediment" or "bad stuff" and water, which the refiner claimed was of no use to him. The tank tables made for both pipe line and producer were marked "Three Per Cent Off," or whatever percentage was deducted. This has been done right down to the present time. In Oklahoma and Kansas, as well as in the eastern states, 3 per cent is deducted; in Texas, 1 per cent; in the Rocky Mountain fields, 2 per cent. In California no deduction is made.

The oil purchaser regulates its prices accordingly. In Oklahoma the purchasing companies in posting prices for crude oil plainly state that the price is based on a 97 per cent tank table and that on any other measurement the price will be made to accord with it. In other words, the purchaser will not pay as high a price per barrel on a 100 per cent basis as he will on a 97 per cent basis, but will pay a higher than posted price if the deduction is more than 3 per cent. In the Osage Nation the Indians have always been given the same price for royalty oil as the producer received, and the oil has been purchased under the same conditions, with 3 per cent deduced for "b.s. and water."

A dispatch from Washington quotes Harry W. Blair, assistant attorney general, as saying that no attempt is being made to recover the full 3 per cent deducted by the companies to cover dirt, shortage and overage losses. The suits were filed in an effort to determine the actual losses in the oil, which the government believes to be less than the flat 3 per cent.

Through the decision of the courts, it is hoped to determine a mean loss percentage which can be applied in the future as well as being used to determine the amount of the claim against the companies, Blair explained. Claims against the companies in the suits filed at this time will only apply to the deductions made on oil recovered from the Indian lands prior to 1930, Blair said.

Three years ago the Oklahoma Tax Commission sued Stanolind Crude Oil Purchasing Co. for oil run on which 3 per cent deduction had been made in its returns. Judge Vaught, in federal court in Oklahoma City, heard the suit and decided in favor of the defendant company and his decision was sustained on appeal.

Pipe Line Activity

Humble Gas Line

HOUSTON, Tex., Nov. 30.—Humble Oil & Refining Co. has announced plans for construction of a 122-mile welded 10-inch gas line from the Tomball field in Harris County to serve industrial areas at Houston, Port Arthur, Baytown, Beaumont and Port Neches. Contract for the construction of the line, which will have a capacity of 60,000,000 feet daily, is expected to be let during the week and the line is scheduled to be in operation by April 1.

The company also announced that a combination low-pressure and high-pressure gasoline plant having a daily capacity of 35,000,000 feet will be constructed in the field to strip the gasoline content from the gas, boosted through the line. Two gathering systems are to be laid throughout the field which will tie into the low-pressure and high-pressure wells.

Contracts for the sale of gas have already been made with industrial consumers at the above-named cities and the line will later be tied in with the Dickinson, Anahuac and Amelia fields where the company has large proven gas reserves.

This is the company's third invasion into the industrial gas field. It recently constructed a gas system throughout the city of Tomball and is furnishing gas free of charge for special drilling privileges within the townsite, while from the Pledger field in Brazoria County it operates approximately 37 miles of gas lines to the Long Point, Old Gulf and Boling sulfur fields where it is furnishing gas to the Texas Gulf Sulphur Co.

While there are approximately 24 proven gas reserves within a radius of 60 miles of Houston, gas for industrial purposes at present is being furnished from numerous fields in Southwest Texas and Coastal Louisiana, consequently Humble Oil & Refining Co.'s entrance into the industrial gas business might open a market for many of these reserves and may eventually lead other producing companies to lay their own lines into Houston and nearby cities.

Ontario Pipe Lines

TILLSONBURG, Ontario, Nov. 28.—Alex Rogers and associates will lay a 6-mile pipe line from their wells in Middleton Township to serve industrial and commercial gas consumers in Tillsonburg. An 8-mile line will also be laid to deliver gas to the Borden milk plant at Straffordville.

White Eagle Line

The first gasoline through the new 178-mile pipe line of the White Eagle division of the Socony-Vacuum Oil Co. from Augusta to Kansas City, Kans., by way of Topeka, reached the northern terminus November 28. There are two terminals, one at Topeka, and one at Kansas City. The Topeka terminal will not be completed until after the first of the year and until then gasoline will be shipped by tankcar from Kansas City.

The 6-inch line has a capacity of 33,000 bbls. A booster station is being completed 10 miles north of Emporia. Four grades of gasoline, one grade of kerosene, one grade of heating fuel and one or possibly two grades of power fuel will be pumped through the line. It will be received at the Kansas City terminal at the rate of 550 bbls. an hour.

Industrial Gas Line

TILLSONBURG, Ontario, Nov. 14.—Alex Rogers and associates who have recently developed gas production in the Eden field will lay a gas line along the C.P.R. right of way from Eden to Tillsonburg to supply gas for fuel and power to industrial plants.

Young County Lines

FORT WORTH, Tex., Nov. 30.—Texas Pipe Line Co. is laying two different connecting lines in Young County to connect with new producing areas in that county. Twenty miles of line is being laid to connect the South Bend pool in the southern part of the county and the Bryson pool of Jack County, which is a comparatively new pool in which there has been rapid development. The company is also laying 2½ miles of 4-inch line to connect the James pool, about 6 miles north of Graham, with its 8-inch trunk line extending from Olney to Breckenridge down in Stephens County.

MAINTENANCE HIS JOB

J. D. Jones, mechanical engineer, on the Tulsa pipe line division, Gulf Refining Co., who looks after the maintenance of equipment at trunk line stations between Jenks, Okla., and Dublin, Ind. During the construction of additions to the stations, now under way, he will spend most of his time with the contractor's crews which are starting at the south end of the line and moving north.

Refinery Projects

Amsco Plant Operating

CORPUS CHRISTI, Tex., Nov. 28.—Normal routine operation has begun on the new 3,300-bbl. skimming plant of the Amsco Refining Co. at Corpus Christi, Tex. The unit was placed on stream two weeks ago, processing crudes from local fields. The new refinery is located at the terminal of the General American Tank Storage & Terminal Co., Inc., which supplies the refinery with crude storage and handles its products at the local docks.

New Michigan Company Formed

MUSKEGON, Mich., Nov. 28.—Hanners Oil Co., a new $500,000 Michigan corporation, recently has been formed to take over leasing, producing, refining and marketing activities of George G. Hanners, president, and head of the Superior refinery at Elsie, Mich. Clarence A. Larsen has been named vice president; Frank W. Donovan, secretary; Arthur J. Rhode, treasurer, and Thomas King, director.

Hanners Oil Corp. has acquired the refinery and other assets of the Superior company in exchange for a block of its stock. The refinery was built in 1934. In 1935 capacity was increased to 3,200 bbls. of crude daily. Negotiations for Texas and Oklahoma crude oil supply already have been started by Mr Hanners to augment comparatively small Michigan crude.

Reorganization Plan Approved

SHREVEPORT, La., Nov. 30.—The plan for reorganization of the Louisiana Oil Refining Corp., originally submitted to the court November 20, 1935, with a subsequent hearing on January 7, has been approved by Judge Ben C. Dawkins in an order filed in federal court of Shreveport on November 25, 1936.

Judge Dawkins' decision held against a proposed substitute reorganization plan and all opposition to the accepted plan. The approved plan "continues the business, and there is no evidence that any other plan" could be substituted successfully. It was also held that the plan is "fair and equitable and does not discriminate against the stockholders."

The Arkansas Fuel Oil Co. will take over all property of the Louisiana Oil Refining Corp., and will assume all of its obligations, under provisions of the reorganization plan. Common shareholders will be given preferred stock in Arkansas Fuel Oil Co. with a par value of $25 for each share, or $25 in cash for each share.

Oil Laboratory Established

CALGARY, Alberta, Nov. 28.—The Purple Power Corp., Ltd., headed by J. T. Johnston of Vancouver, British Columbia, has established a laboratory at 1819 Seventeenth Avenue East, in Calgary. In addition to gasoline testing, the company will utilize its own process for blending gasoline and fuel oil for internal combustion engines.

Kent Refinery Sold

MUSKEGON, Mich., Nov. 28.—Kent Refining Co., of Grand Rapids, Mich., recently was sold to H. O. Butler, of Ithaca, Mich., at court auction and ordered to liquidate some of its obligations. Mr. Butler has not yet announced what he will do with the unit purchased at $9,685.

Expand Oil Plant

TORONTO, Ontario, Nov. 30.—Canadian Werner G. Smith Co., Ltd., manufacturers of industrial oils, have acquired additional buildings and land which comprised the former Galena Signal Oil Co. plant at Campbell and Royce Avenues, Toronto.

New Canadian Refinery

WINNIPEG, Canada, Nov. 30.—Mid-West Refineries, Ltd., is now constructing a new 500-bbl. skimming plant in Dauphin, Manitoba. The plant is to be ready for operation in the spring of 1937, being designed and constructed by C. V. Humphreys, of Winnipeg. Herman Deering is president of the Mid-West company.

Disappointing Showing

An Oklahoma wildcat hailed as a new oil pool opener Monday night gave convincing evidence of being a first-class water well early Tuesday. It was Indian Territory Illuminating Oil Co. and Foster Minerals Corp. No. 1 Hatler, C SW NE section 32-2s-17w, south of Frederick, Tillman County. The crew could make little headway, the hole refilling with liquid, 98 per cent water, 2 per cent oil, as soon as it was bailed down. It made several head flows of mud, water and oil. It was shut in, awaiting decision of operators.

Oil in Dawson County

FORT WORTH, Tex., Dec. 1.—Ray Albaugh and others No. 1 Robinson, in section 46, Block M, E.L. Survey, extreme wildcat in Dawson County, West Texas, opened the first production in that county when it pumped 35 bbls. of oil and 10 bbls. of water during first four hours on pumping test before being shut in. Total depth is 5,038 feet. First oil saturation was logged at 4,967 feet.

Natural Gas News

Lone Star Granted Injunction

AUSTIN, Tex., Nov. 28.—The Supreme Court has ruled Lone Star Gas Co. should have been granted an injunction against the city of Fort Worth in the latter's effort to take over the gas distribution system there, and ordered the litigation returned to the trial court.

Suit was brought by the company when the city sought to condemn its property. The trial court erred, the Supreme Court held, when it refused to grant an injunction by sustaining the city's general demurrer, a decision which the Court of Civil Appeals had upheld.

While the legislature may authorize a municipality to take over a plant of a public utility in order that it may be publicly owned and operated, the court held neither the general state statutes nor the Fort Worth city charter made adequate or appropriate provision for the action, adding, "it is evident there must be further legislative action providing adequate and appropriate procedure for condemning properties of the kind here involved, including provisions setting up the mode and manner of ascertaining just compensation, as well as an appropriate method for taking possession pending a final hearing."

California Industrial Rates

LOS ANGELES, Calif., Nov. 28.—Clarification of surplus industrial fuel gas schedules was ordered by the State Railroad Commission which is seeking the establishment of uniform rates by the three major southern companies.

Los Angeles Gas & Electric Corp. was commanded to make reparations to other consumers for charges collected in excess of the schedule.

Southern California Gas Co. and Southern Counties Gas Co. also were told to file revised schedules covering this type of fuel.

Surplus industrial gas is the excess above that used during the winter months when demand is highest. A uniform amount of gas is purchased throughout the year by the gas companies, so that during the summer there is a surplus. This is sold at a lower rate to certain industrial consumers.

For several years it has been the general rule to increase the price one-sixth cent par 1,000 feet of gas for every 1 cent per barrel increase in the price of fuel oil. In some cases, however, there has existed a varying rate.

In the past, Standard Oil Co. fuel oil price has been used as the basis for surplus gas prices. In the commission order, which followed hearings, Union Oil Co. and General Petroleum Co. rates were added to the list of standards, with the price schedule bases.

Texas Allowable Increased

AUSTIN, Tex., Nov. 30.—The Railroad Commission has ordered natural gas production schedules increased by 286,502,000 feet daily during December to an outlet of 1,982,151,000 feet.

The sweet gas outlet outside of the Panhandle received the largest increase, 124,908,000 feet, which raised its output to 432,112,000 feet. The sweet gas zones in the Panhandle were increased by 36,491,000 feet.

The east sweet zone received an allowable of 178,229,000 feet, an increase of 3,018,000 feet, and the west zone an allowable of 698,462,000 feet, an increase of 33,473,000 feet.

Output for the Panhandle sour gas area was set at 597,193,000 feet, a gain of 123,893,000 feet, and sour gas areas outside of the Panhandle 16,155,000 feet, an increase of 1,210,000 feet.

Pennsylvania Probe

HARRISBURG, Pa., Nov. 30.—The Public Service Commission has started an investigation into rates charged by three natural gas companies operating in northwestern Pennsylvania with a view of obtaining a reduction.

The companies are Smethport Natural Gas Co., of Smethport; United Natural Gas Co., of Oil City, and Manufacturers Gas Co., of Pittsburgh. They operate in McKean, Clearfield, Venango, Crawford, Mercer, Jefferson, Butler, Clarion, Elk and Warren counties.

The companies must answer by December 15.

Seeks Houston Franchise

HOUSTON, Tex., Nov. 30.—The city council has agreed to grant a hearing to Judge W. H. Ward, who, as attorney for H. C. Cockburn, oil man, is seeking a 30-year city franchise for Mr. Cockburn as trustee for Channel Gas Corp. for transportation of natural gas in the city for sale to industrial consumers and to the city-owned Magnolia Park gas system.

The city has already executed a contract with the same interests for the purchase of gas for the Magnolia Park system at a lower price than is being paid Houston Gulf Gas Co. The purchase of gas is supposed to begin February 1.

After this purchase contract was executed, a franchise was requested that would allow the sale of gas to industrial consumers as well as the Magnolia Park system, putting Channel Gas Corp. partially in competition with two local gas distributing systems.

Public Works Director J. M. Nagle, who had been instructed to investigate the source of supply, reported:

"Roderick A. Stamey, geologist, has made a report of the Kenco Corp. holdings at the Dickinson field, which I understand is the intended source of supply.

"Mr. Stamey stated: 'It is believed that the Kenco Corp. property at the Dickinson field has a potential gas reserve of 54,841,904,350 feet, or a sufficient supply to permit withdrawal of 20,000,000 feet of gas daily over a period of approximately eight years.'"

Broomfield Gathering Rate

MUSKEGON, Mich., Nov. 30.—Gathering rate on natural gas in the Broomfield Township, Isabella County, field, central Michigan, has been reeduced from 3 to 2 cents per 1,000 feet at the request of Michigan Cities Natural Gas Co., serving Mount Pleasant and other communities.

A 34,000,000-Foot Well

WELLSVILLE, N. Y., Nov. 30.—Bringing in its sixth large gas well in the township of Alma, Allegany County, the Cunningham Natural Gas Co. drilled in a 34,000,000-foot well on the Thomas Burns lease, according to J. T. Cunningham, president.

Natural Gasoline

Handles Record Amount of Gas

SHREVEPORT, La., Nov. 30.—United Gas Public Service Co.'s recently enlarged Myrtis absorption gasoline plant, serving the Rodessa field, established a new world's record last week as it handled 180,000,000 feet in 24 hours. At times during the day it was necessary to by-pass some of the gas by the plant, but a total of 125,700,000 feet were processed, with a yield of 133,242 gallons, or 1.060 gallons per 1,000 feet.

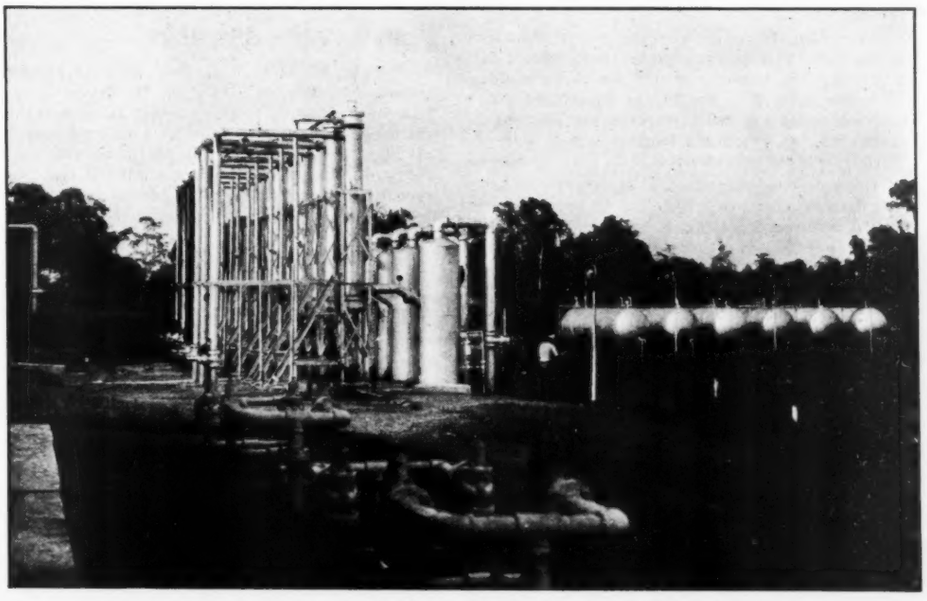
Phillips to Build Rodessa Plant

SHREVEPORT, La., Nov. 30.—Phillips Petroleum Co. are completing plans for the construction of a 50,000,000-foot capacity absorption gasoline plant to serve the Cass County, Texas, side of the Rodessa field. Tentative location has been announced as the Farrier lease in the northern part of the W. R. Meyers Survey. This is the second plant announced for the Texas portion of Rodessa, American Oil Co. of Dallas having announced plans several weeks ago for such a unit on its property in the J. H. Rives Survey.

Construction is to begin at once, it is reported, the plant to cost in the neighborhood of $600,000. Gas will be processed from producing wells on more than 2,000 acres.

Empire Building Kansas Plant

Empire Oil & Refining Co. has started construction on its new natural gasoline plant in the Burrton field of Reno County, near Haven, Kans. The plant will have a capacity of about 30,000 gallons daily and will cost approximately $350,000. Compressors will handle residue through the plant and deliver it into Cities Service Co.'s 10-inch line nearby.



Gasoline condensers and stock tanks in N.K.P.M. gasoline plant, northern Sumatra

STATES MAY BOOST ALLOWABLE 100,000-BBLS. OVER ESTIMATES

OKLAHOMA CITY, Dec. 1.—Developments here today and yesterday indicated that the allowable production of Texas, Oklahoma and Kansas for December may total 100,000 bbls. daily in excess of the recommendations of the Bureau of Mines for the three states. The possibility that Oklahoma and Kansas proration officials may rescind their previous recommendations of keeping production within the bureau's estimated demand for crude in those states was the principal subject of conversation among several hundred operators who are here in connection with the annual meeting of the Independent Petroleum Association of America and the Interstate Oil Compact Commission.

The desirability of increasing Oklahoma and Kansas allowables took form following the arrival of Col. E. O. Thompson, who announced that the Texas Railroad Commission, of which he is chairman, would not rescind its action in stepping up the state's December allowable to 1,201,470 bbls. daily, an increase of 56,270 bbls. over the bureau recommendation and 92,210 bbls. higher than the November allowable. Colonel Thompson explained that there was an actual demand for Texas crude higher than the bureau estimate and the commission would permit operators to supply it.

Members of the Oklahoma Corporation Commission have decided to allow the bureau recommendation to stand until December 11, when another hearing will be held to determine whether there is a demand which would justify an increase. If an increase is permitted it probably will be made retroactive until the first of the month. Kansas proration officials who have been here since yesterday have indicated another hearing will be called in that state within a few days to discuss an increase in the December output.

The revision of allowable planned by Oklahoma and Kansas was not taken in retaliation for the action by Texas. Representatives of the commissions of the three states met yesterday and it is understood no criticism developed regarding the Texas increase. It is felt that the bureau recommendation was too low for that state and that later hearings will develop a similar situation in Oklahoma and Kansas.

Harmony prevailed at the called meeting of the Interstate Oil Compact Commission which was held this morning at the state capitol. Colonel Thompson, chairman of the Compact Commission, presided and routine matters were discussed and acted upon in a two-hour session. Axtell J. Byles, president, and W. R. Boyd, Jr., executive vice president of the American Petroleum Institute, and Charles F. Roeser, president of the I.P.A.A., were among the guests who attended the session. Mr. Byles assured the members of the Institute's and the industry's support and appreciation of the work of the Compact Commission since its organization last year. The next meeting of the commission will be held March 12, 1937, at Oklahoma City.

The following representatives of the compacting states were present: Oklahoma—W. J. Holloway, Tom Anglin and C. C. Brown; Texas—Colonel Thompson and Elwood Fouts; Kansas—Homer Hoch and Marvin Lee; Illinois—William Bell; New Mexico—Lieut. Governor-elect Dow and Dr. E. H. Wells; Colorado—Warwick Downing.

Six states which are not members of the compact were represented by the following observers: Michigan—Henry Hunt and Dr. Virgil Kirkham; California—J. R. Pemberton; Ohio—Wendell Stephens; Pennsylvania—W. A. Jones; Indiana—V. E. Bolyard; Kentucky—Earl D. Wallace.

MEXICAN STRIKE CALLED OFF PENDING NEW CONFERENCE

NEW YORK, Dec. 1.—Last-minute intervention by Mexico's labor department last week averted a general strike of the Syndicate de Travajaderes Petroleros (oil workers syndicate) which was to have started Sunday, Nov. 29. Suspension of the general strike call resulted from lengthy conferences between government officials, labor leaders and representatives of employers. Under terms of the temporary settlement, a conference of operators, workers and government officials, will be arranged during the next 120 days, dating from Nov. 28, for the purpose of agreeing on a new contrato ley (contract law) for the entire oil industry.

Up until Saturday morning when suspension of the strike call was announced there seemed little possibility the workers would desert their duties en masse Nov. 29. Employers firmly refused to enter negotiations with workers on original demands of the syndicate leaders which were declared "wholly unreasonable."

Genaro Vasquez, Mexico secretary of labor, called the conference which led to the agreement to discuss a contract law to apply throughout the oil industry in that country. Government influence was exerted in the dispute only after workers and employers had refused to alter their respective positions. Oil companies presented a united front in refusing to discuss settlement on terms of the workers. Leaders in the oil labor syndicate had been equally steadfast in their strike declaration unless their demands were met.

The government's intervention was not expected, although cessation of revenue from Mexico's $350,000,000 oil industry would unquestionably present a serious problem to the country's financial budget. Furthermore, the government is now seeking a loan of $5,500,000 from American banks with tax revenue from the country's oil companies pledged as redemption.

Another factor which may have entered into temporary disposition of the strike call was the drive launched in Mexico to include railroad workers with those engaged in the oil industry. A previous strike by railroad workers was quickly suppressed by the government. All Mexican railroads are under government control. Strategy in combating the threatened oil strike may have included propaganda for a railroad strike which automatically placed the government on the side of the petroleum industry. Oil company executives anticipate the final solution to the present dispute and frequent labor upheavals in the past will be enactment of a control law. This disposition of the problem, while not entirely desired by the oil companies, probably will be accepted within bounds of reason as a means of terminating the labor disputes.

PORT LAVACA SHIPMENT

PORT LAVACA, Tex., Nov. 30.—Six thousand barrels of oil were loaded on the barge Thomas Rice of Galveston, the first cargo to pass through the recently dredged harbor at Linn's Bayou. The oil was purchased by the Maritime Oil Co. of Houston, Tex., from the Barnsdall Oil Co., which recently constructed a pipe line to bring the oil from the company's producing wells in Placedo.

TEXAS OUSTER SUIT IS ARGUED BEFORE SUPREME COURT

AUSTIN, Tex., Nov. 30.—The Texas Supreme Court heard oral arguments last week in the state's "ouster" suit against 15 major oil companies, against whom penalties of approximately $17,000,000 and forfeiture of charters was sought.

The suit was instituted by Gov. Allred when he was attorney general, and a Travis County District Court, sustaining a general demurrer of defendants, dismissed it on grounds the National Recovery Act suspended the state's anti-trust laws.

Attorney General William McCraw appealed to the Court of Civil Appeals at Austin, which upheld the trial court judgment, but on the different ground that anti-trust laws exempted farmers, stock raisers and certain others from penalties and therefore were invalid.

Company attorneys argued agriculture and livestock did not constitute a reasonable classification for exemption from anti-trust measures, that under the law persons other than members may hold stock in co-operatives, and the exception rendered enforcement of the anti-trust law a denial of equal protection by law.

Company counsel charged also that the code of the American Petroleum Institute was in conformity with laws of the state, and that the state's allegations of conspiracy which cited regulations of the code regarding price posting, acquisition of filling stations and other practices were contradictory.

TIDELAND OIL ISSUE MAY GO TO CALIFORNIA LEGISLATURE

LOS ANGELES, Calif., Nov. 28.—Following the negative vote on the tideland oil drilling proposition at the election there will probably be a legislative attempt to set up a basis on which the state can make recovery on the oil now being drained from Huntington Beach, and any other tideland oil on which the state has primary claim. This will depend on negotiations with oil companies for what is regarded as a satisfactory return, presumably considerably higher than the approximate 14 per cent royalty basis proposed in the general election.

If no agreement is reached, Governor Merriam indicated he will support a program in the legislature which would provide authority for the state to develop its own oil lands, or give the director of finance power to execute leases at competitive bidding.

MADISON PLEAS POSTPONED AGAIN UNTIL DECEMBER 7

The entering of pleas by a large number of oil companies and executives in connection with the indictments returned last August by a federal grand jury at Madison, Wis., has been postponed from December 1 to December 7. The pleas of those who made bonds for their appearance at Madison with the opening of the district court will be heard by Judge Patrick T. Stone. It has been indicated that some of the defendants at that time will challenge jurisdiction of the court in the case which involves an alleged violation of antitrust acts in the conduct of a gasoline-buying program in the Mid-Continent area.

An appearance hearing for several defendants living in Tulsa area has been set for January 26. A similar hearing involving New York defendants has been set for January 7.

The regular grand jury which has been conducting the investigation since last May and which returned the indictments has been empaneled as a special grand jury to continue the investigation. This action was taken on December 1 when the regular term of the grand jury expired.

THE MARKETS*

CRUDE OIL: *Growing scarcity of supplies causing concern among refiners in some areas, with reports of scrambling for connections. Much talk about higher prices, but feeling prevails that no important increases will be announced before the close of the year. No changes during the past week.*

REFINERY: *Heating oils appear headed for marked scarcity. Prices continue to move upward. Influence of tight crude market is revealed in firm tone of gasoline. Heavy refinery buying of natural gasoline.*

TANK-WAGON AND SERVICE STATION: *Gasoline, kerosene and tractor fuel up in southwestern Kansas. No other changes of consequence. Gasoline market has weak spots in East.*

FINANCIAL: *Oil stocks generally moved with the rest of the securities market, dipping sharply, but steadying later. Average of 30 representative stocks for week ending November 28: High, 38.79; low, 36.68; close, 38.38. Week ending November 21: High, 39.10; low, 37.06; close, 37.72.*

*Detailed information in Market Section.

RUGGED

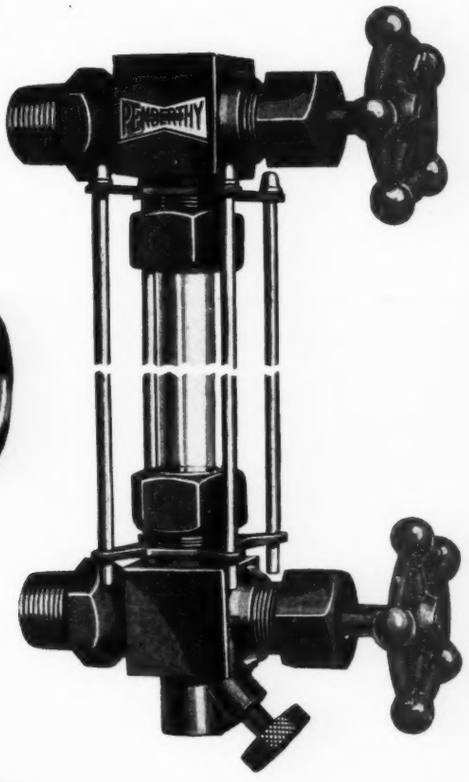
THEY CAN "TAKE IT"

DEPENDABLE operation under the most severe operating conditions is responsible for the universal popularity of these three gages throughout the oil industry. All three can and do "take it"—they are ruggedly built of the highest grade materials by an organization with 48 years experience in the manufacture of quality products. The "All Iron" is made from a modern electric iron alloy, the "Safeguard" from high grade steam metal bronze and the "Navy type" from Navy Bronze Composition M.

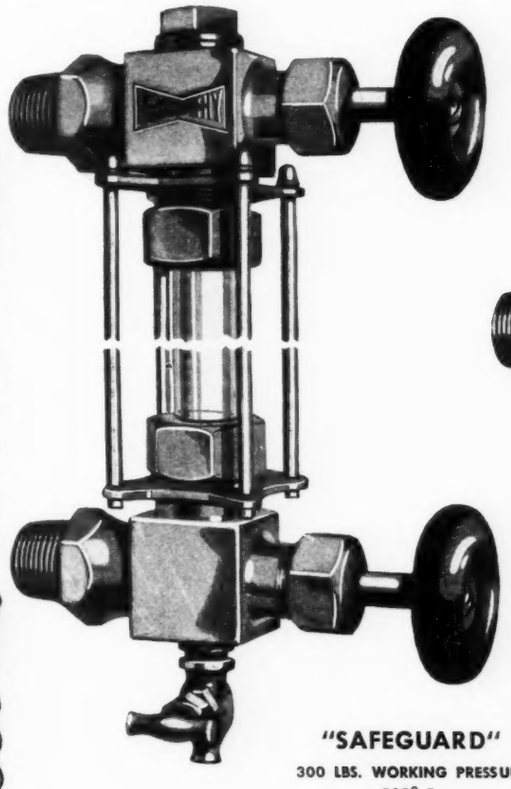
Automatic shut-off is provided on each gage. Upper and lower bodies have ball check valves that seat positively to prevent loss of liquid when glass is broken. The hand operated stop valves are then closed with safety and a new glass inserted.

Every gage is thoroughly tested and carefully inspected at the factory. Write for a copy of the new catalog that gives all the facts.

Supply houses everywhere stock Penberthy Liquid Level Gages.



"ALL IRON"
500 LBS. WORKING PRESSURE
750° F.



"SAFEGUARD"
300 LBS. WORKING PRESSURE
500° F.

"NAVY TYPE"
350 LBS. WORKING PRESSURE
500° F.

PENBERTHY PRODUCTS

PENBERTHY INJECTOR CO.

Manufacturers of Quality Products since 1886

DETROIT, MICHIGAN WINDSOR, ONTARIO

No matter which way you look at it

KEROTEST

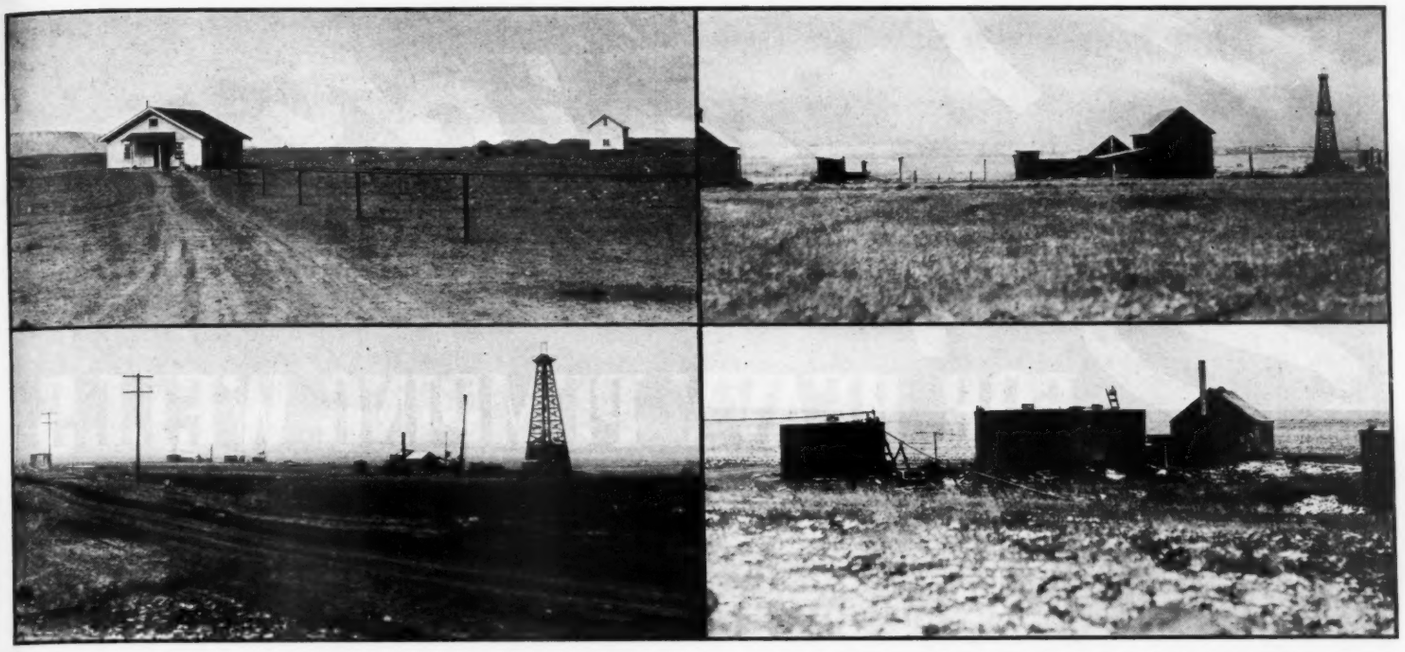
is your logical specification

If It's High Pressure Strength You Need—consider the kind of steel that makes up Kerotest Cast Steel valves and fittings—genuine heat treated manganese molybdenum that tests over 100,000 pounds per square inch . . . **If It's Space-Saving Compactness,** remember the distinctive small cellar design of Kerotests . . . and **For Pre-tested Dependability** there's only one valve or fitting you can buy backed by the famous 24 hour kerosene pressure test and that's Kerotest. ¶ Add to this the 100 per cent completeness of the Kerotest Valve and Fitting line, its ready availability throughout the petroleum world and you can appreciate why Kerotest is a logical specification everywhere.

KEROTEST MANUFACTURING CO.
PITTSBURGH, PA.

Central power to suit climate in Kevin-Sunburst field

Wooden derricks are still used in Cut Bank field



Standard derrick and drilling machine used at one Pondera location

Cold weather necessitates special equipment for handling production

Montana Has Many Promising Oil Areas

By L. G. E. BIGNELL

BUTTE, Mont., Nov. 30.—Montana is the third largest state with a land surface of about 147,000 square miles and a good way to secure some idea of its size is to ride diagonally across it from Billings, near the Wyoming line, to Shelby, near the northern border, and back again nearly straight south to Butte. Such a trip can now be made over well-paved roads, most of which have been laid with bituminous oil coatings. One road is over 700 miles long, from the eastern to the western boundaries, through the southern portion of the state. There are about 4,600 miles of improved roads in Montana of which 4,000 miles are bituminous surfaced.

The oil and gas interests are divided geographically into two parts. The southern and eastern areas center around Billings, while the northern fields are in the neighborhood of Shelby. Refineries are scattered through the state, those in the south getting their crude from Wyoming fields with those in the north running crude from the Kevin and Cut Bank and other fields adjacent to the plants. The accompanying table shows a refinery capacity of about 25,500 bbls. per day with the average throughput for September of 14,436 bbls. daily. During the same month the 1,471 oil wells of Montana produced 535,757 bbls., or an average of 14,436 bbls. per day. Part of this oil was shipped into Canada and some was shipped into the state from Wyoming.

Being so far removed from the consuming centers the oil industry in Montana has had to solve many of its problems according to local conditions. Demand for crude has varied and the wells have been prorated by consumers' demand. Cut Bank oil is now selling for $1.35 per barrel and Kevin-Sunburst crude is quoted at $1.15 per barrel, while the oil from the Pondera field brings $1.05 and Cat Creek crude is posted at $1.17.

A test that attracted more than ordinary attention was drilled by Montana-Dakota Utilities Co. near Baker, Mont., on the Baker-Glendive structure. This structure has been known for some time and is reported 80 miles long with the southern end extending into North Dakota. The first well had a showing of oil at 6,698 feet in what is reported to be the Madison limestone. Water broke into the hole and could not be shut off so the hole has been deepened to about 8,300 feet where another oil showing was had and the lime was acidized. Some reports state the second showing is in lime of Devonian age; others claim the lime is Chester of Mississippian age. The Montana-Dakota Utilities Co. has made two additional tests and these wells are now drilling.

The most active field at this time is the Cut Bank area having nearly 70,000 acres of proven oil production and from 60,000 to 70,000 additional acres of gas fields. The oil field is about 27 miles long and from 3 to 7 miles wide. Wells are spaced in the center of 40 acres and about 255 have been drilled. The oil is found at from 2,800 to 3,300 feet and the wells cost from $20,000 to $22,500 each to complete. This cost does not include equipping the wells for production and many are on the pump. Tank batteries cost considerable for it is usually necessary to protect the tanks with insulated shells and heating coils. Last winter the temperature dropped to 50 degrees below zero and for many days registered 30 degrees below. Where the wells make water along with the oil it is necessary to provide rather elaborate treating systems and many unique layouts have been developed by the companies to handle this emulsified oil.

The Kevin-Sunburst field was opened in March, 1922, and has 892 producing wells with many abandoned and plugged wells. This field covers about 12 square miles and finds the oil in the Sunburst sand of Lower Cretaceous age at about 1,500 feet, and the Ellis oil sand of Mississippian age at about 1,800 feet. The wells are nearly all drilled with cable tool spudders and cost about $7,000 to drill and complete. To this must be added equipment needed for producing and handling the oil and water.

Another important field southwest of Shelby about 35 miles is the Pondera oil field, opened in June, 1927, and containing about 150 wells. The Madison limestone, the producing horizon, is found at about 2,000 feet and the wells cost about $8,500 to drill and case. As many of the wells now make water along with the oil, treating plants and insulated tanks are needed, which adds materially to their cost.

The only other important field is east of Winnett in the central part of the state and is known as the Cat Creek oil field with about 132 completed wells, and a daily production in August of a little over 700 bbls.

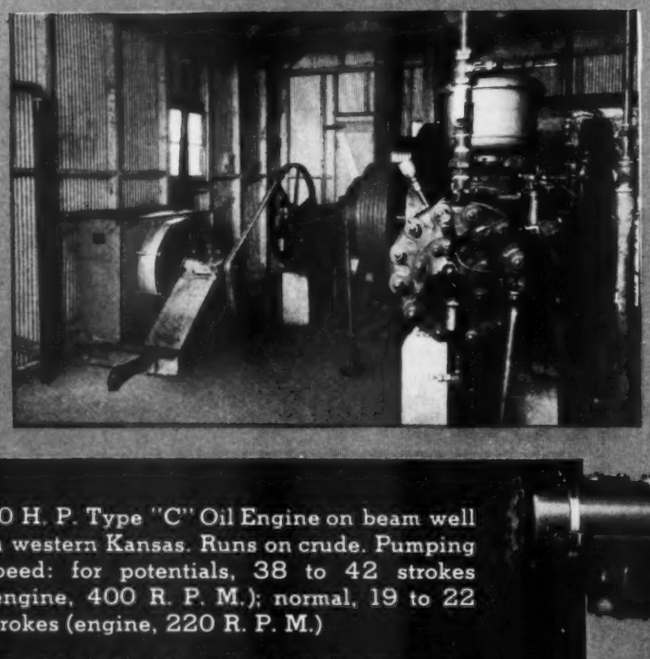
CUT BANK FIELD

It will be noted that the Cut Bank field has a proven oil and gas area larger than East Texas. Like East Texas this field is found on the west flank of a great regional structure known as the Sweetgrass Arch, a broad anticlinal fold about 60 miles across from east to west and extending northward from Great Falls, Mont., into Canada, about 200 miles. The axis or crest of this fold dips or plunges northward so that the rock formations exposed at the surface near Great Falls are 1,500 feet below the surface at Shelby and 2,500 or more feet deep at Lethbridge in Canada. The average dips of the strata are about 50 feet to the mile. The Sweetgrass Arch lies east of the Rocky Mountains.

Surface evidence indicates the arch is of late Cretaceous age and the Virgelle (Eagle) sandstone forms a conspicuous escarpment 12 miles west of its crest. The Eagle sandstone is in about the middle of the Upper Cretaceous section and below this there are many exposures of Colorado shale at the base of the Upper Cretaceous formations.

The producing formations range in age from Lower Cretaceous with the Sunburst sand of the Kootenai formation productive in Kevin-Sunburst and Cut Bank oil fields to the Ellis oil sand, the upper member of the Madison limestone of Mis-

Superior TYPE C ENGINES FOR HEAVY PUMPING WELLS



Type "C" Convertible Gas and Oil Engines are making records on heavy pumping wells in Kansas. The big reserve of engine power and wide speed range give increased output when running potentials. The resulting increase in allowable production and income soon pays for the engine.

Many wells take 90 to 100 H. P. but these Superiors go through the potential period without flinching. No excessive heating. No spray or carbon troubles when operating on crude. Their highly satisfactory performance proves Type "C" a real Heavy Duty Engine beyond question.

50 H. P. Type "C" Oil Engine on beam well in western Kansas. Runs on crude. Pumping speed: for potentials, 38 to 42 strokes (engine, 400 R. P. M.); normal, 19 to 22 strokes (engine, 220 R. P. M.)

25, 30, 40, 45 and 50 H. P. sizes. For beam wells, bandwheel or geared powers, and other heavy duty service.

THE NATIONAL SUPPLY COMPANY
OF DELAWARE

NSCO
REG. U. S. PAT. OFF.

National

sissippian age. The Triassic, Permian and Pennsylvanian formations are missing over this arch which was apparently an ancient land surface during those geological periods.

The geology of the Cut Bank field has not been worked out yet to the satisfaction of all geologists. That is to say they are not in accord on many important features and until more evidence has been developed by drilling it will be hard to make final decisions. It does seem apparent that in this area the productive formations once formed the shore line of ancient seas and many of the sands are of the lenticular type with stratigraphic changes in sedimentation playing an important part in the trapping of the oil and gas.

One well on the west edge of the Cut Bank field has caused much discussion. It was drilled to a total depth of 2,978 feet into the Ellis oil sand and tested only 2 bbls. of oil and 12 bbls. of water. The casing had been set above this producing horizon and there was about 47 feet of shale between the Ellis shale and the Sunburst sand which had been cased off. It was recalled that a showing had been had in the Sunburst when drilled so the well was shot with 40 quarts of nitroglycerin through the casing at 2,858 to 2,869 feet and the largest well in the field secured. It flowed as much as 2,000 bbls. of oil at one time and has been capable of producing from 600 to 700 bbls. of oil per day when the market could take that much production. Three other offset wells have been drilled, east, north and south, without finding any oil, but no well has been drilled to the west partly because there is no outlet for the oil if found. Opinions differ as to whether this well is producing from a highly permeable sand section, a crevice or is influenced by down-dip water.

The occurrence of water in this field is peculiar. At the north end of the structure there are three terraces. One terrace has produced some gas but in another terrace water was encountered at a point 700 feet higher than the established water level at the south end of the structure. This seems to indicate lenticular sand bodies with the general dip of the producing formations to the south and west.

In drilling wells in the Cut Bank field great care is exercised in keeping above water. Above the producing Ellis oil sand there is usually found a marker of iron pyrites and then a bed of Ellis shale and then the Ellis sand, the upper member of the Madison formation. In the Pondera field the black lime strata carries pyritic iron in the form of fine crystals while the iron pyrites above the Ellis shale is reported to occur in large crystals. This may indicate that this iron pyrites has been formed in the limestone in one locality and has been carried into other areas by water.

MONTANA PRODUCTION—OCTOBER, 1936

Field—	Wells	Production— Total	Production— Daily	Dy. ave. per well
Kevin-Sunburst	900	127,230	4,104	4.5
Cut Bank	255	318,607	10,277	40.3
Pondera	150	38,720	1,249	8.3
Cat Creek	132	20,138	649	4.9
Dry Creek	7	9,217	297	42.4
Elk Basin	17	1,102	35	2.0
Lake Basin	3	1,293	42	13.7
Soap Creek	1	1,353	44	43.6
Sweetgrass Hills	6	961	31	5.0
Total	1,471	518,621	16,728	11.3

MONTANA REFINERIES

(Capacity in barrels)

Arro Oil & Ref. Co., Lewistown	2,000
Big West Oil Co., Kevin	1,200
Bear Den Ref. Co., Liberty Co.	50
Carroll Refining Co., Roundup	50
Conrad Ref. Co., Conrad (sub. of Home O. & R. Co.)	1,000
Continental Oil Co., Lewistown	1,500
Cut Bank Refining Co., Cut Bank	350
Deloraine Refining Co., Cilmont	200
Dunlap Refining Co., Cat Creek	75
Hart Refineries, Missoula	300
Hawley, Ted, Gallup City	50
Hole Bros. Refining Co., Cut Bank	350
Home Oil & Refining Co., Great Falls	1,000
Hunt, Eugene, Refinery, Winnett	200
Independent Refining Co., Laurel	5,000
International Refinery, Sunburst	5,500
McKeehan, C. A., Molt	25
Red Lodge Refining Co., Red Lodge	75
Snow Cap Oil Co., Sunburst	330
Minntana Oil Co., Lake Basin	30
Unity Petroleum Co., Kalispell	800
Yale Oil Corp. of So. Dak., Billings and Miles City	5,000
Total	25,585

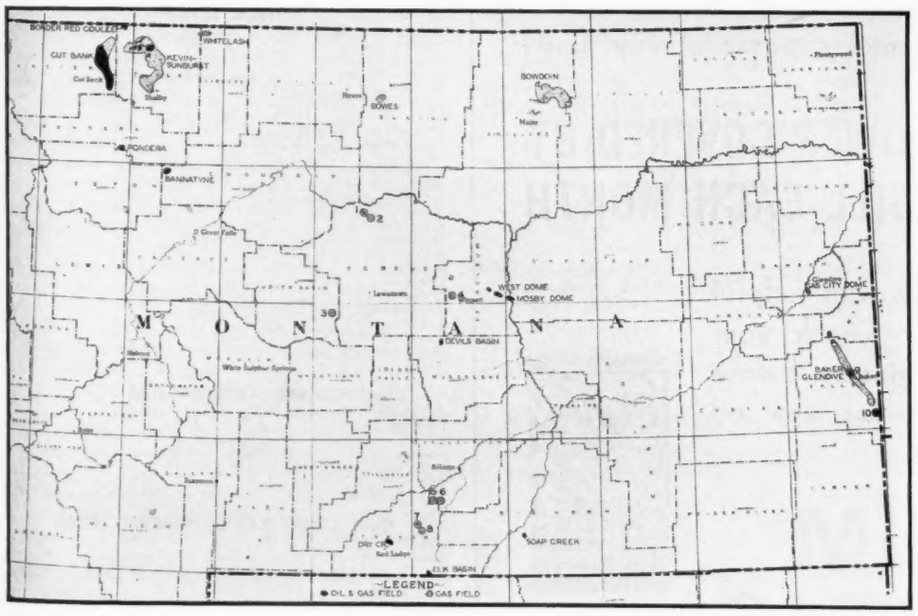
	Bbls.
Oil produced and refined in Montana, October	160,000
Oil imported from Wyoming and refined in Montana	157,000
Total	317,000

One factor of much importance to the practical oil man is the character of the producing formations. If it is hard and tight it is usually assumed the well will be of small capacity, but if soft and highly permeable large wells will result. This is expressed in another way. If the producing formation is tight the oil will not rise very high in the hole but if permeable will come to or nearly to the surface. Offset wells have varied widely in their productivity and it seems apparent stratigraphic conditions are largely responsible for these differences.

During the early life of the Kevin-Sunburst field it was not uncommon to have dry holes offsetting big wells but since acid treatment has been introduced dry holes are the exception. Many wells with very small showings before acidizing have been converted into good producers with a low rate of decline. This is one area in which it may be stated acid treatment "makes the well" and it is usually followed in all areas where the oil is found in the Madison lime formation. On the other hand the Sunburst sandstone is usually shot with nitroglycerin.

While the area now proven for oil and gas in the Cut Bank field exceeds 140,000 acres the oil reserve is not large compared with East Texas. The production per acre is variously estimated but a fair average may be placed at 4,000 bbls. per acre. With about 70,000 acres proven this should place in sight about 280,000,000 bbls. of oil. In the gas area it is estimated at least 300,000,000,000 feet of gas is in reserve and there is still a large area between the north and south producing fields to be drilled.

Future drilling will be controlled largely by the local demand for the crude. The gas is finding an outlet to Great Falls, Helena and Butte and much of this gas is being treated in a plant near Cut Bank and butane extracted in addition to natural gasoline. The butane, about 5,000 gallons per day, is being shipped to Spokane, Wash., where it is used exclusively in the local buses. It has been found preferable to gasoline because of low temperatures during the winter.



Principal gas and oil fields and wildcat wells in Montana

1—Judith Operating Co. No. 2 Government, section 35-22n-17e.
2—Emmons and others No. 3 Winnifred area, section 6-21n-18e.
3—Fletcher P. Hunt No. 3 Hobson, section 30-14n-15e.
4—H. Clark Bowland and others, No. 1 Kalispell, section 25-15n-25e.
5—Tarrant No. 1 Metzger, section 26-3s-24e.
6—R. C. Tarrant No. 1 Mooser, section 26-3s-24e.
7—Round Butte Oil & Gas Co. No. 2 Blue Grass area, section 3-6s-23e.
8—East Bridger Oil & Gas Co. No. 1, section 23-6s-23e.
9—Montana-Dakota Utilities Co. No. 1 Warren, section 23-8n-59e.
10—Montana-Dakota Utilities Co. No. 1 Smith, section 8-4n-62e.

OBITUARIES

E. RENSHAW THOMAS, Southwest Texas operator of San Antonio, died recently in Alice, Tex.

SAMUEL HOCH, 53, formerly a Pure Oil Co. foreman in the Porter Township, Midland County, field, Michigan, died recently.

RALPH B. EVANS, 53, Philadelphia, Pa., chief counsel for Gulf Refining Co., died at Haverford, Pa., last week.

I. A. REES, 68, Indian Territory Illuminating Oil Co., was killed and his wife seriously injured in an automobile crash 13 miles north of Burlington, Kans., last week.

IKE RICKETTS, production superintendent for the Amerada Petroleum Corp. at Tomball, Tex., died at his home at Houston last week after an illness of several weeks.

WILLIAM BRADLEY MILLER, 65, of Derrick City, Pa., oil producer for 57 years in the Bradford field, died at Bradford hospital on November 26 following an emergency operation.

WARREN E. WILSON, 72, a native of Pennsylvania, died in Tulsa last week of pneumonia. For many years he was a district superintendent for the South Penn Oil Co.

Crude Oil Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ending November 14, totaled 289,964,000 bbls., according to the Bureau of Mines, a decrease of 230,000 bbls., comprising decreases of 90,000 and 140,000 bbls. in domestic and foreign crude, respectively. Daily average crude runs to stills were about 2,900,000 bbls., or 20,000 bbls. below the daily average of the week ending November 7. Imports increased, the daily average being 118,000 bbls., compared with a daily average of 109,000 bbls. for the week ending November 7.

STOCKS OF CRUDE PETROLEUM NOVEMBER 7

Grade of crude oil—	Nov. 7	Nov. 14
Pennsylvania Grade	4,128,000	4,139,000
Other Appalachian	606,000	595,000
Lima-N. E. Indiana-Michigan	984,000	996,000
Illinois-S. W. Indiana	9,832,000	9,856,000
N. Louisiana and Arkansas	10,760,000	10,510,000
West Texas and S. E. New Mexico	28,543,000	28,564,000
East Texas	18,611,000	18,522,000
Other Mid-Continent	116,033,000	115,885,000
Gulf Coast	26,760,000	26,719,000
Rocky Mountain	25,469,000	25,404,000
California	30,179,000	30,523,000
Foreign	1,789,000	1,649,000
Total reported weekly	273,694,000	273,364,000
Estimates of unreported stocks	16,500,000	16,600,000
Total stocks	290,194,000	289,964,000

NEW when you get it.....
NEW as long as you use it..
that's
PURCHASED ELECTRIC POWER!

You are not concerned with depreciation or maintenance on PURCHASED ELECTRIC POWER, because it's NEW when you get it and NEW as long as you use it. Its efficiency never declines; its dependability never falters. No insurance. No interest. No taxes. No incidental expense of any kind!

THE ONLY FORM OF POWER COVERED BY ONE BILL EACH MONTH

Your Power Company is ready with helpful facts, figures and precedents. Check your data with Power Company engineers before you install any prime mover for any oil country job.

PETROLEUM ELECTRIC POWER CLUB

Texas Allowable Is Increased 56,270 Bbls. Over Bureau

AUSTIN, Tex., Nov. 30. — Again disregarding the Bureau of Mines estimates of market demand, the Railroad Commission set the December basic allowable production for Texas at 1,201,470 bbls. daily. This is 56,270 bbls. above the allocation by the Bureau of Mines, and an increase of 92,210 bbls. over the commission's November 1 allowable.

Special increases in certain fields and gains by new wells had boosted the November allowable to 1,161,410 bbls. by November 18, or 52,110 bbls. over the Bureau of Mines estimates.

Nominations of purchasing companies for December, made at the hearing, totaled 1,383,883 bbls., or 182,413 bbls. above the basic allowable. However, with the usual increase each month as a result of special grants and new wells, the difference should be decreased by 50,000 to 60,000 bbls. by the latter part of December.

Col. E. O. Thompson, chairman, in announcing the allowables, declared there is a pressing demand for the oil, and that fields, shown to have greater demand, have been granted increases where the oil can be produced without physical waste. He said statistics prove there is only a 40- to 50-day supply of oil aboveground and this oil is in very strong hands.

The increased allowable was distributed generally throughout the main districts.

District—	Allowable	Increase
Southwest Texas	179,724	17,553
Gulf Coast	169,242	23,625
East Central Texas	57,652	12,098
Rodessa	21,882	6,508
East Texas field	444,034	4,642
West Central Texas	58,061	3,306
West Texas	147,414	20,678
North Texas	62,136	1,800
Panhandle	61,335	2,000
Total	1,201,470	92,210

Although no special revision of the East Texas field allowable was made, the factor on which production is based was left at 2.32 per cent of the hourly production, which, considering new wells placed the allowable on December 1 at 444,034 bbls.

Fields in which special increases were made during the month are:

WEST CENTRAL DISTRICT

Field—	Allowable Nov. 1	Allowable Dec. 1
Crockett	1,123	1,423
Hurdle	90	225
Jack (south half)	2,686	3,527
Shackelford	7,665	7,834
Upton	8,986	10,022
Young	4,641	5,300

WEST TEXAS

Brown-Altman	1,280	1,729
Church-Fields	6,895	7,050
Cowden (north)	5,203	7,086
Crane-Cowden	691	917
Emperor	663	995
Estes	1,570	2,246
Foster	300	538
Fuhrmans	454	754
Goldsmith	861	1,461
McElroy	2,150	4,650
Henderson	597	1,017
Howard-Glasscock	16,244	16,603
Iatan-East Howard	6,416	7,055
Keyes	1,925	2,800
Keystone	826	1,555
Masterson	330	917
Means	911	1,266
McClintic	1,001	1,240
Penwell	5,291	5,396
Sayre	5,442	5,968
Scarborough	1,719	1,855
Taylor-Link	1,055	1,155
Ward (north)	5,112	8,829
Ward (south)	12,593	13,288
Yates	24,614	27,820

EAST CENTRAL TEXAS

Cayuga	5,200	7,510
Long Lake	822	1,099
Powell	2,184	2,316
Rodessa	15,374	21,882
Sulphur Bluff	299	399
Talco	5,924	10,189
Van	26,296	31,296

GULF COAST AND SOUTHWEST TEXAS

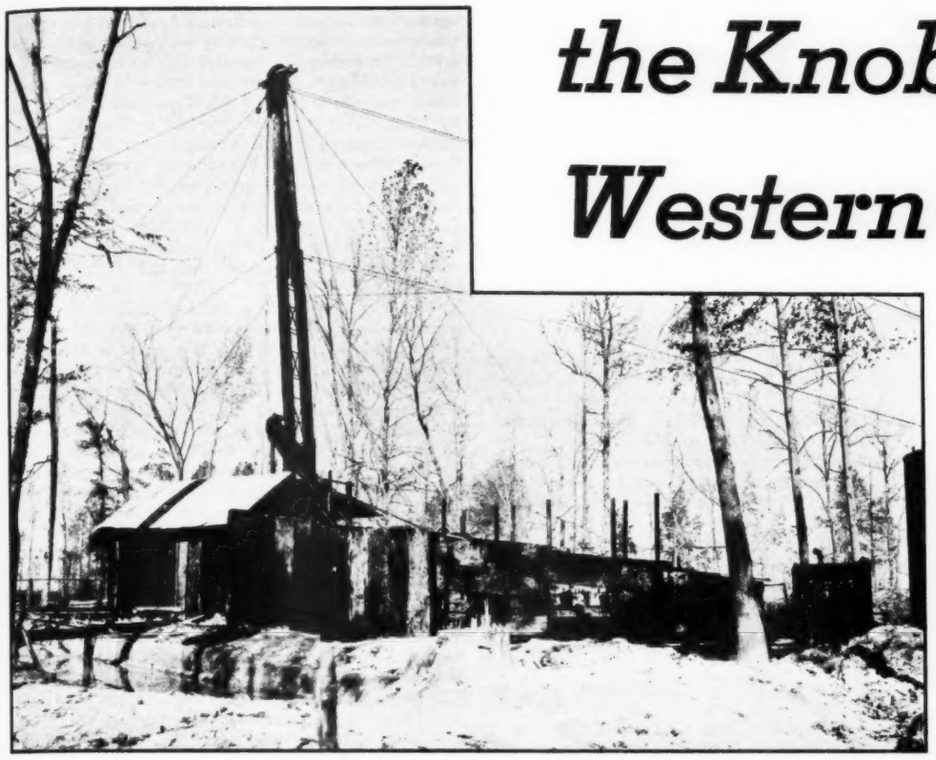
Conroe	34,389	37,667
South Houston	3,611	5,739
Corpus Christi	8,000	9,162

The commission called its next monthly oil proration hearing for December 18 in Austin.

Rodessa Allowable

RODESSA, La., Dec. 1.—The Louisiana side of the Rodessa field has been given an allowable production of 62,500 bbls. per day in December. It is expected that the production of new wells will be offset by the decline in older wells.

Six Sands Found Productive in the Knobs District, Western Kentucky



Typical drilling rig in Knobs field which takes its name from two hills prominent on a flat terrain

By T. P. SANDERS

Unusual drilling problems have been encountered in the Bates and Beelers Knobs field of western Kentucky which was recently discovered and is still in the early development stage. The area making up the field will undoubtedly show a large recovery of oil and gas per acre when all of the producing sands have been developed because there are so many pay horizons. At present, however, the large number of oil, water and gas sands, all lying within 1,800 feet of the surface constitute an unusually difficult cable-tool drilling problem, and most of the wells so far completed required considerably more drilling time than other Kentucky wells of the same depth.

The Bates and Beelers Knobs field, or the "Knobs field" as it is generally known, is located in McLean County, Kentucky, about 5 miles southwest of the town of Livermore. It is not connected with what is known as the Livermore field The Livermore pool lies within the Livermore town site and extends to the north and the northeast. The most important oil sands in the Knobs field are productive in the Livermore field also. The Livermore field is an older and apparently a more important development than the Knobs field.

The shallowest production in the Knobs field was found in an unnamed sand at a depth of 400 feet, which is productive of both oil and gas. At about 765 feet lies the Big Water sand, which is a prolific gas pay in part of the field. Oil and gas both are found at 1,160 feet in the Fuque stray sand. The Jett sand at a depth of 1,450 feet has so far been found to be productive only of gas. Oil is found in the Jackson sand at about 1,550 feet, in the Barlow sand at 1,650 feet, and in the Bethel sand at 1,775 feet. The Jones sand, often a producer in western Kentucky, lying between the Jett sand and the Jackson sand, is the only sand of this section which does not contribute to the productivity of the Knobs field. The 400-foot sand and the Big Water sand are of Pennsylvanian age, while the lower sands are Mississippian. The first production was discovered in the 400-foot sand in the eastern portion of the field. Shortly after this, oil was found in the western portion of the field in the Barlow sand. There are now 10 light oil wells producing from the 400-foot sand and 11 wells are producing from the Barlow sand. A Jett gas well with a potential of about 21 million feet per day is shut in to await pipe line connections, and eight rigs are drilling on inside locations in the field.

The drilling trouble has been most severe on Cumberland Petroleum Co.'s Elmer Nall lease. Well No. 1 on this lease, drilled to only 625 feet, was dry and abandoned. No. 2, which was completed as a gas well late in September, had trouble penetrating the 400-foot sand because of gas production, and it was found necessary to mud off this gas. Several water sands were found below this gas strata, and at 765 feet the Big Water sand was topped while drilling was being carried on with the hole full of water. The gas in the Big Water sand blew out the water and continued to blow out the water as it rapidly came in. The gas was estimated at 13,000,000 feet per day, and produced out of control for 10 days. An attempt was made to case off the gas and water sands by drilling through the Big Water sand and setting a packer below it, so that the gas from this formation would be confined between the 10-inch casing, on which the packer was run, and the drive pipe which had been set through about 100 feet of alluvial soil. However, when the packer was set, the gas and water broke out at the surface about 200 feet from the hole, having found a passage under the seat of the drive pipe. Since it was evident that this would cause a crater if allowed to continue, it was necessary to raise the packer above the gas sand and continue to produce the gas through the casing. The next step in bringing the well under control was to hire an oil-well cementing crew and equipment. Cement slurry was pumped down the casing and around the packer cementing the 10-inch casing to the surface.

Two more strings of casing and a packer had to be run in drilling to the Jett sand at 1,267 feet. The hole had then been reduced to 6 inches, which made it impractical to continue the test to deeper sands. The initial production from the Jett was 21,268,000 feet of gas per day, and the rock pressure was 475 pounds. The well will be shut in until a pipe line connection is provided by the Kentucky Natural Gas Co. They are now laying a 6-inch welded line 24 miles long into the Knobs field which will be completed about December 20.

No. 1 Elmer Nall, which is now being drilled, encountered about 4,500,000 feet of gas in the Big Water sand at 765 feet which flowed about 15 bailers of water per day from the well. This made drilling difficult because an oil saver to fit the 13½-inch casing in the hole could not be obtained, so the cable had to work through a hole in a block driven in the casing head, while the water and gas were led off of the derrick floor by an 8-inch line joining the casing below the wooden block. It is planned to set the 10-inch casing at about 820 feet in the Chester (Kincaid) limestone, and this string will have to be mudded or cemented to the surface to hold the gas pressure.

Besides those formations which have already been found productive in the Knobs field, it is likely deeper pays will be found, since no deep test has been drilled to the St. Peter sandstone in the Kentucky basin. The formations below the Bethel are relatively unknown in this area, but the Corniferous lime, which has been the most productive formation in Kentucky, and other possible producers are present, and the productivity of the many upper sands proves the structure to be favorable, although it may change at depth. The Knobs field, like the Livermore field, lies in the Rough Creek fault zone, a group of high-angle thrust faults separating the Kentucky basin from the Illinois basin. The Knobs field is evidently situated on a horst block within this zone. As yet there has been no evidence of faulting within this block.

SYSTEM	GROUP	FORMATION	MEMBER	DRILLERS NAME
RECENT	ALLUVIUM			
PLIOCENE?				SURFACE
PENNSYLVANIAN	CONEMAUGH	LISMAN		
	ALLEGHENY	CARBONDALE		
		TRADEWATER		
	POTTSVILLE	CASEYVILLE		BIG WATER SAND
MISSISSIPPIAN	UPPER CHESTER	KINKAID		TOP CHESTER LIME
		DEGONIA		
		CLORE		CHESTER LIME
		PALESTINE SS		
		MENARD LS		
		WALTERSBURG	UPPER	CHAPMAN STRAY SAND
			LOWER	FUQUA STRAY SAND
		VIENNA LS		BROWN LIME
		TAR SPRINGS		JETT SAND
	MIDDLE CHESTER	GLEN DEAN		LITTLE LIME
		HARDINSBURG		JONES SAND
		GOLCONDA		BIG LIME
		CYPRESS		JACKSON SAND
	LOWER CHESTER	PAINT CREEK	PRODUCTUS INFLATUS ZONE	BARLOW LIME
			EDWARDS	BARLOW SAND
			REELSVILLE	BETHEL LIME
		SAMPLE		BETHEL SAND
		RENAULT	BEAVER BEND	CUNNINGHAM LIME
			MOORETOWN	CUNNINGHAM BREAK
				MISS LIME
	MERAMEC	STE. GEN.		MC CLOSKY
		ST. LOUIS		
		WARSAW?		MISS LIME
	OSAGE			
DEVONIAN	HINDERHOOK	NEW ALBANY		BLACK SHALE
DEVONIAN SILURIAN? ORDOVICIAN?				

Geologic time table

Oil News from Foreign Lands

$2,000,000 Sale Approved

Sale of the Carib Syndicate, Ltd.'s 21 per cent interest in Colombian Petroleum Co., owner and operator of the Barco concession in the eastern part of Colombia and bordering the western boundary of Venezuela, was approved by stockholders at an adjourned meeting in New York, November 25. Stockholders voted to dispose of 20,868 shares of Colombian Petroleum Co. stock for approximately $2,000,000. The sale was approved by the required two-thirds majority of certificate holders despite efforts of a minor owner to halt the sale through court injunction. Plea for an injunction to halt the sale resulted in a bench ruling that the decision rested entirely in hands of the stockholders.

Purchasers of the Carib Syndicate's stock interest in Colombian Petroleum Co. were described in Wall Street as a firm of French bankers. Remainder of the Colombian Petroleum stock interest, amounting to a little more than 79 per cent, is owned jointly by the Texas Corp. and Socony-Vacuum Oil Co., Inc., by virtue of a purchase in April, 1936, from South American Gulf Oil Co.

United Kingdom Imports

Refined products imported by the United Kingdom during the third quarter of 1936 set a new peak for the year and far outranked the same quarter's business of 1935. Crude oil imported was slightly less than absorbed during the second quarter of this year, but was substantially above the 1935 third quarter.

Fuel oil imported for the three months amounted to 476,195 bbls., a gain of nearly 1,000 bbls. over the second quarter. Shipments of foreign bunkers reached a two-year peak of about 200,000 bbls., an increase of 37 per cent over the third quarter of last year.

Gasoline imports were the highest of any quarter this year, but were slightly less than in the third quarter of 1935 and amounted to approximately 780,000 bbls.

New Refinery at Chosen

The Chosen Sekiyu Kaisha (Chosen Petroleum Co.) has started its new refinery at Genzan on stream. First crude oil receipts at the new refinery consisted of approximately 84,000 bbls.

In organizing the Chosen Petroleum Co., Japan Oil Co., Mitsubishi and Hayama Oil Companies transferred their interests in Chosen to the new concern. With exception of Ogura Oil Co., which opposed the consolidation policy, all Japanese oil firms in Chosen are reported handling heavy oil principally.

Importation of crude oil from Mexico is the objective of the newly organized firm, Tea Sekiyu Kaisha (Oriental Oil Co.) in Fusan, with capital of yen 1,000,000.

Six Japanese and two foreign refiners of kerosene doing business in Japan have reached an agreement controlling the market of the product in that country.

Until the agreement was reached, reports the Bureau of Mines in its current statement on International Petroleum Trade, the kerosene market was in such a chaotic condition that prices were at a pitiable low level. In Tokyo, several gasoline stations were detected selling a blend of kerosene with motor fuel and in effect defeating the purpose and operation of an earlier agreement reached on marketing of gasoline. Six leading Japanese kerosene refiners agreed among themselves to control this particular market and later invited two foreign concerns to join. The foreign companies accepted the invitation and conditions have already shown improvement.

Stollmeyer Concession

Refusal of the governor of Trinidad to approve assignment of the Stollmeyer concession has caused abandonment of Premier (Trinidad) Oilfields, an organization chartered in England, which was to have obtained assignment of the concession and had arranged for development of the property through public subscription and through an operating agreement with an established concern in Trinidad. The governor's refusal to approve the negotiations between Premier and Sir Lennox O'Reilly, forced the abandonment.

Drilling in Arabia

Two of the California Arabian Standard Oil Co.'s seven operations on the Arabian mainland, immediately west of the Persian Gulf, are at testing stage, two are waiting on cement, one is drilling, one is a location and the other is listed "digging cellar."

The Damman structure discovery producer, the No. 2 well, is standing shut in after producing at the rate of 4,000 bbls. of 51 gravity oil in 24 hours from 2,150 feet.

California Arabian Standard No. 1 Damman, originally drilled to 3,203 feet, is plugged back to 2,090 feet, where operators are awaiting receipt of perforating equipment. The No. 3 Damman, originally drilled to 2,837 feet, is also plugged back to 2,124 feet, where upper showings will be acidized and tested for production.

Nine-inch casing has been cemented at 1,781 feet in No. 4 Damman with total depth of 1,858 feet. Operations are suspended until cement sets. The No. 5 Damman is drilling at 1,395 feet. No. 6 Damman is a location and operators are digging cellar for No. 7 Damman. The seven tests are distributed over a wide portion of the indicated structure and when fully tested will provide operators with valuable information on commercial extent and productivity of the Arabian mainland feature.

About 40 miles north and slightly west of the Damman structure, California Arabian Standard No. 1 El'Elat, a rank wildcat exploratory test on a structural condition similar to that proven productive, is waiting on 13⅜-inch casing to cement at 1,527 feet. The total depth is 1,533 feet.

Drilling in Chile

Drilling launched under government subsidy in the southern provinces of Chile is reported proceeding rapidly, although no showings justifying claims of commercial production have been encountered in the two tests under way. The exploration is confined to the Magallanes district where tests labeled "Punta Prat" and "Tres Puentes" are being drilled.

Ancap refinery, Uruguay

Adverse Conditions in Egypt

Despite antiquated laws and adverse transportation conditions, several large oil companies are reported considering the possibilities of Egypt as a source of crude oil production. Reports that various companies are studying the structural possibilities in the country reached the United States through A. L. Richards, Cario, vice consul, and made public by the metals and minerals division, department of commerce. One company has recently conducted an extensive survey in the Western Desert and along the Red Sea Coast and followed up by filing claims with the Egyptian government while another company is now engaged in a study of the Eastern Desert and the Peninsula of Sinai. The only oil production so far developed in Egypt is near Hurghada on the Red Sea where Anglo-Egyptian Oil Fields, Ltd., a subsidiary of Anglo-Iranian, is recovering approximately 1,250,000 bbls. annually. The production rate has been reduced from more than 2,000,000 bbls. in 1931.

Egyptian legislation governing drilling activities creates a serious barrier to extensive drilling and present antiquated laws leave claimants in doubt of their position since certain areas for mining purposes have never been clearly defined. Considerable confusion exists regarding the definition of the rights of the owners of the surface to the subsoil. Geographical position of the most highly regarded potentially productive areas is another handicap to Egyptian oil exploration and development. Even if the most favorably located district, just south of Mersa Matruh in the Western Desert, should prove productive, a haul of 200 miles to reach the Meditennanean Sea at Alexandria would be involved. From either of the other two favorably regarded territories, east of the Suez, the transportation problem is even more serious. It is unlikely that the Suez Canal Co. would permit right of way for a pipe line parallel to the canal and charges for moving petroleum to that entrance to the Mediterranean are prohibitive, in light of competition with crude from Iraq and Persia in European markets.

Solvent Unit at Naples

Construction of a 1,000-bbl. daily Duo-Sol solvent refining unit is under way at Naples, Italy, by Max B. Miller & Co., of New York, for Reffineria di Napoli, Italian affiliate of Socony-Vacuum Oil Co., Inc. The solvent plant will be completed probably in April, 1937.

The solvent refining and dewaxing system being built into the "Aquila," S. A. refinery at Trieste, Italy, is an Edeleanu combination unit employing the benzol SO_2 process. The "Aquila" refinery which will have distillation and cracking capacity of approximately 6,500 bbls. is being engineered throughout by Moore & George, Ltd., London, England.

Both the Reffineria di Napoli plant at Naples and that of the "Aquila," S. A. at Trieste are to be finished in the early part of next year.

New Eastern Venezuela Wildcat

Another wildcat oil test in eastern Venezuela has been ordered by Venezuela Gulf Oil Co., about 10 kilometers north of La Canoa. The test is No. 1 Carapa and operators are rigging up rotary to spud. Standard Oil Co. of Venezuela is proceeding at shallow depths on its two new wildcats and is expanding drilling in some eastern Venezuelan districts previously proven or indicated productive.

The active drilling operations in eastern Venezuela, now more than a dozen tests, indicate companies holding concessions probably are committed to an intensive exploration program for remainder of this year and early 1937.

Standard of Venezuela (Creole) has succeeded in developing commercial production in the Amacuro district, an extension or close affiliate of the Pedernales area.

Graveyard gasoline

Don't let your gallonage follow ancient cars to the graveyard—it's the old cars that furnish your market if you make straight-run gasoline

When they go to the scrap heap the skimming plant refiner's market goes with them

And how they are going

Last year 2,325,000 old cars went to the motor graveyard and 3,612,000 new ones came out on the road

A gain of 1,287,000 cars, you say—increased consumption?

Yes, but it won't do you any good unless you have mighty good anti-knock gasoline to sell

Dubbscracking is the way to make the best kind of gasoline for the new cars—and the old ones, too

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by THE PETROLEUM PUBLISHING COMPANY at Tulsa, Oklahoma

P. C. LAUINGER, President
C. O. WILLSON, Editor
W. T. ANDERSON, Managing Editor

JAMES McINTYRE, Consulting Editor
W. T. ZIEGENHAIN, Engineering Editor
L. G. E. BIGNELL, Prod. Engr. Editor

C. K. FRANCIS, Ph. D., Technical Editor
DAL DALRYMPLE, Associate Editor
T. F. SMILEY, Associate Editor
D. H. STORMONT, Associate Editor
M. F. BALDWIN, Circulation Manager
S. H. ROURKE, Business Manager

Victor Lauriston, Box 136, Chatham, Ont., CANADA
Tolbert R. Ingram, 130 State Office Bldg., DENVER
L. E. Bredberg, 617 Petroleum Bldg., FORT WORTH
Neil Williams, 809 Sterling Bldg., HOUSTON
L. P. Stockman, 313 Union Oil Bldg., LOS ANGELES
Mitchell Tucker, 717 City Bank Bldg., SHREVEPORT

P. A. Elliott, Chronicle Bldg., MUSKEGON
H. Stanley Norman, 415 Lexington Ave., NEW YORK CITY
George Weber, 809 Sterling Bldg., HOUSTON
J. P. O'Donnell, Derrick Bldg., OIL CITY
George A. Whitney, P. O. Box 98, TOLEDO
Hugh D. Mallon, 808 Investment Bldg., WASHINGTON

Advertising: E. KLAPPENBACH, Manager

C. L. Cain, 415 Lexington Avenue, NEW YORK CITY
Howard Markt, 802 Leader Bldg., CLEVELAND
C. R. Farmer, 616 S. Michigan Avenue, CHICAGO
Wayne Rives, 809 Sterling Bldg., HOUSTON
K. J. Langley, 114 W. Second Street, TULSA
J. H. Tinkham, 1406 S. Grand Ave., LOS ANGELES

Brings Issue to Focus

The effect of the drilling of unnecessary wells in proven areas upon the future of proration was emphasized in the report of the Independent Petroleum Association of America committee at the annual meeting in Oklahoma City.

With new wells reducing the allowable per well in proven fields proration can be stretched to the breaking point. If there can be no cure for this situation then the industry is indeed headed for trouble.

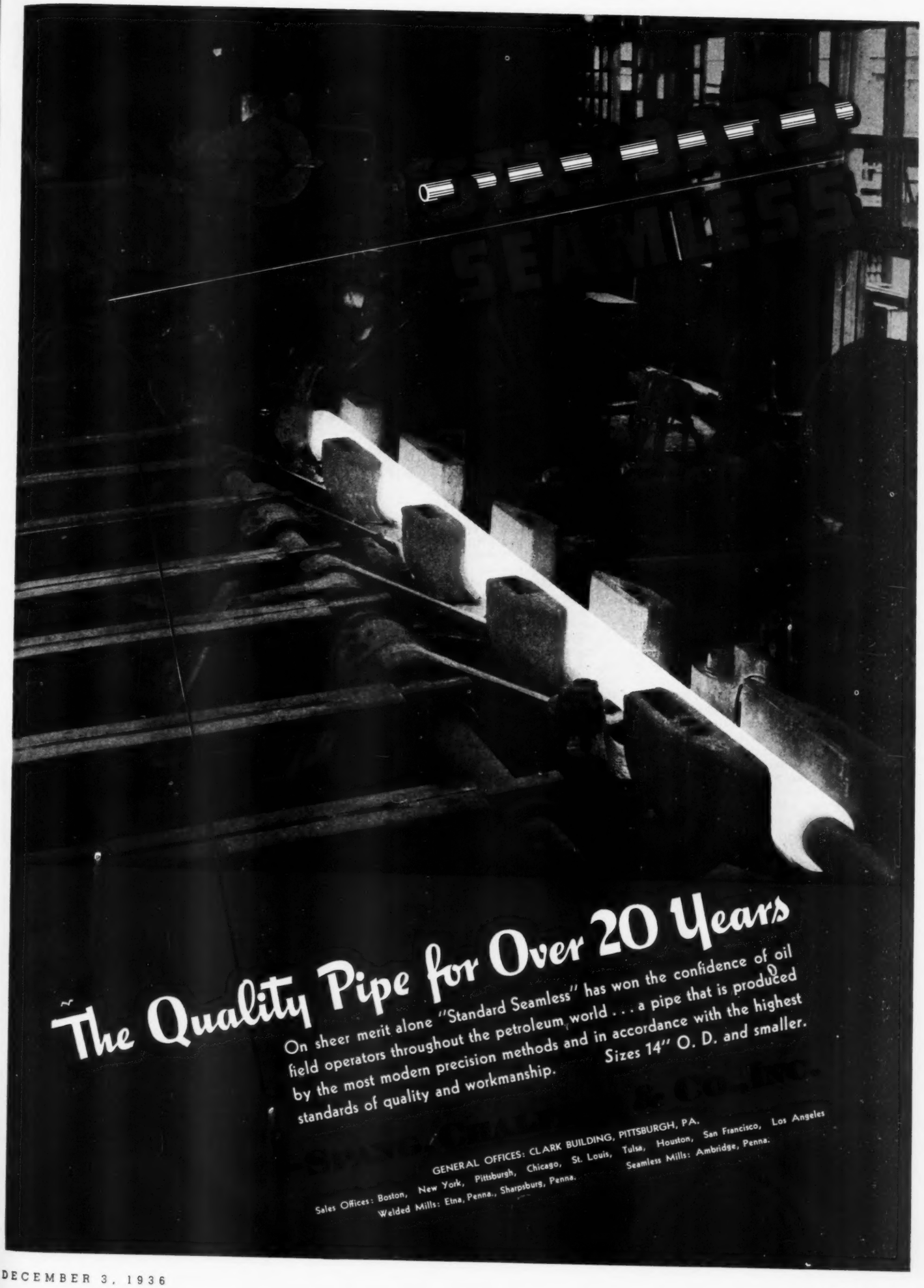
This report, however, makes the definite statement, without applying it to any particular state, that the regulatory bodies not only have lawful authority to enforce well spacing or limit drilling in proven areas to the requirements of economic and efficient operation, but it goes further and says that the present system, which in effect forces the drilling of more wells than necessary, might be set aside by the courts for the reason that it involves wasteful expense.

The investigation by the subcommittee which presented this report took into consideration not alone the legal phases but the technical problems and practical difficulties, such as taking care of the interests of the small tract owner.

Its opinion, flatly at variance with some other views, brings the issue squarely before the industry. The contention, in effect, is that the states have the necessary authority or can confer it by legislation to restrict unnecessary drilling in proven areas on a well spacing or acreage basis. The aim is to secure regulation of operations in proven areas and there is no intention to restrict drilling of exploratory or wildcat tests which are necessary to assure maintenance of adequate reserves at all times.

To say you cannot regulate drilling in a legal way is, it is argued, to admit that it is impossible to carry on a conservation program, a defeatist acknowledgment which the committee repudiates with a suggested remedy.

The question calls for study by the best brains of the industry from all angles, economic and engineering as well as strictly legal. It is to the interest of the industry and of those with whom it does business to maintain the stability that has been reached. Moreover, it is clearly apparent from any study of the situation that the interest of the consumer, both now and in the future, is best protected under a plan which will prevent unnecessary expenditures. The efforts of the past several years in building up that stabilization cannot be abandoned simply because one method carried to its conclusion may collapse of its own weight. If there is a better way the industry should find it and apply it. The demand is for action.


The Quality Pipe for Over 20 Years
On sheer merit alone "Standard Seamless" has won the confidence of oil field operators throughout the petroleum world . . . a pipe that is produced by the most modern precision methods and in accordance with the highest standards of quality and workmanship.
Sizes 14" O. D. and smaller.
GENERAL OFFICES: CLARK BUILDING, PITTSBURGH, PA.
Sales Offices: Boston, New York, Pittsburgh, Chicago, St. Louis, Tulsa, Houston, San Francisco, Los Angeles
Welded Mills: Etna, Penna., Sharpsburg, Penna.
Seamless Mills: Ambridge, Penna.

Many Factors Affect Naphtha in Turner

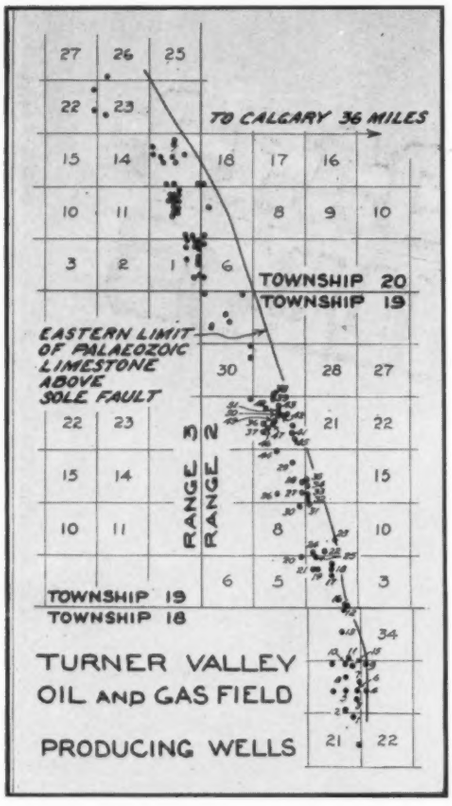


Fig. 1—Plat of producing wells in the Turner Valley oil and gas field

Turner Valley has been producing from a gas cap, 14 miles long by about 1 mile wide. Early in the history of the field, the east limit of production was found to be the intersection of the top of the productive limestone by an overthrust fault. The west limit of production has not been defined. Prior to June 15, 1936, because of a steep westerly dip, and the consequent increased costs of drilling, the field was extended downdip scarcely far enough to do more than indicate the existence of crude oil on that flank. On the date mentioned, Turner Valley Royalties No. 1 was completed, flowing 900 bbls. per day, 44 gravity oil, at 6,820 feet, and this well has encouraged further drilling down the west dip.

Some of the early completions at around 2,000 pounds reservoir pressure produced 400 to 700 bbls. per day, 72 gravity naphtha. The wells were called oil wells, and, under varying government regulations, operators recovered as much naphtha as possible from a given gas quota or allowable. Gas-oil ratios have been quite similar to those obtaining in "gas and distillate" wells in United States fields, where comparable reservoir pressure conditions prevailed. The gas wastage phase of this subject was discussed in a previous publication.*

With decline of pressure, the relative importance of naphtha production has become less, and that of natural gasoline has become greater. For the life of the well, the quantity and values of the natural gasoline recovered by absorption plants, will exceed those of the naphtha recovered in the separator. Therefore, natural gasoline is considered on an equal basis with naphtha production.

The data assembled here is based on orifice meter measurements of gas volume, well-head pressures, tank gaugings, and charcoal G.P.M. tests. The addition of accurate pressure-bomb measurements and Podbielniak analyses would of course add valuable information.

The present picture of Turner Valley field is that of approximately 100 wells, nearly all producing a naphtha above 70 gravity. Production of individual wells varies all the way from 1 to 100 bbls. per day, and for each barrel recovered, 100,000 to 300,000 feet of gas passes to absorption plants. Charcoal tests show from 0.15 to 0.32 imperial gallon per 1,000 feet; this represents natural gasoline production amounting to from 25 to 75 per cent of the well's total daily production (naphtha plus natural gasoline).

The value of a well to the producer depends on the quantity of saleable products recovered. The largest operator, supplying fuel gas to the pipe line serving southern Alberta cities, is the only operator receiving important revenues from the sale of the gasoline plant "dry" gas. For other operators the saleable products are two: (1) Naphtha recovered by separators: (2) natural gasoline recovered by absorption plants.

As is usual in limestone fields, initial production of individual wells varies widely. Comparative size of wells, or relative producing capacity, is governed by porosity, fracturing, and other characteristics of that portion of the producing horizon drilled into. This original size or capacity becomes apparent soon after completion of the well, and under ordinary producing conditions this fundamental capacity factor is not usually subject to change. There are several factors which do vary, or may be varied, affecting the production of naphtha or natural gasoline, and it is the purpose of this discussion to record some information regarding these varying factors.

It is found convenient to reverse the usual oil-well terms for measuring well efficiency. Instead of volume of gas produced per barrel of oil, we shall refer to quantity of oil produced per 1,000 feet of gas. Unit production, whether of crude naphtha or natural gasoline, is here represented in imperial gallons per 1,000 feet, designated by the letters G.P.M.

*Conservation of Natural Gas, by George R. Elliott; the Canadian Mining and Metallurgical Bulletin, December, 1934.

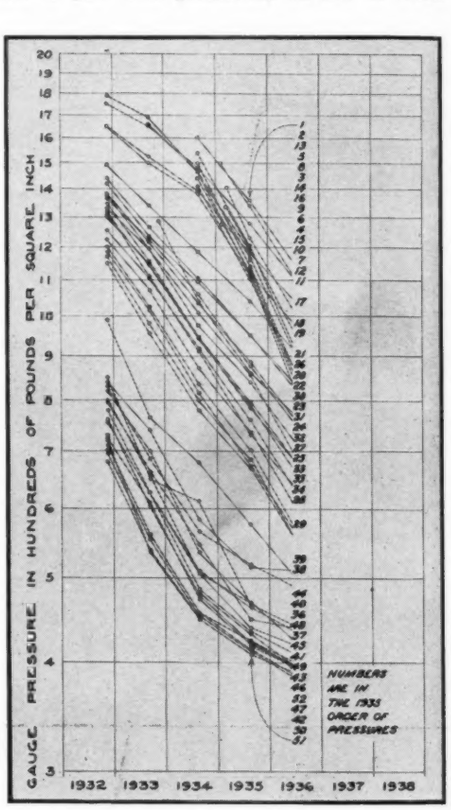


Fig. 2—Semilogarithmic graph of closed-pressure decline curves

TABLE 1—EFFECT OF SEPARATOR PRESSURE

Measurement No.—	Approximate volume per cent of government potential	Gauge pressure—Well-head (lbs.)	Gauge pressure—Separator (lbs.)	Differential well-head to separator	M.F.C. per 24 hours	Mean daily atmospheric temperature	G.P.M.—Separator	G.P.M.—Tail-gas	G.P.M.—Total
1 A	100	420	300	120	10,668	10	.102	.259	.361
1 B	100	416	150	266	11,566	4	.056	.302	.358
2 A	75	465	305	160	8,469	6	.115	.278	.393
2 A'	75	460	298	162	8,509	52	.090	.252	.342
2 B	75	470	148	322	8,206	45	.068	.281	.349
3 A	60	485	300	185	7,107	43	.113	.253	.366
3 B	60	490	156	334	7,353	42	.076	.272	.348
4 A	50	491	296	195	5,697	45	.117	.255	.372
4 B	50	490	150	340	5,653	60	.074	.260	.334

TABLE 2—EFFECT OF LIQUID ACCUMULATION ON TAIL-GAS G.P.M.—WELL NO. 25

Closed pressure (well-head)	Gauge pres're—Back-pressure (well-head)	Gauge pres're—Separator pressure	Differential pressure (well-head to separator)	Gas volume—Mcf per 24 hrs.	Gas volume—Pct. of potential	Atmospheric temp. at time of test	Date blown	Date of test	Days of liquid accumulation	Tail-gas G.P.M.
840	580	233	347	12,053	80	65	Aug. 25, 1934	Jan. 31, 1935	159	.27
800	580	210	370	10,276	71	59	Aug. 25, 1934	Apr. 25, 1935	243	.22
760	520	250	270	11,106	79	70	June 25, 1935	July 8, 1935	13	.28
720	500	215	285	9,895	74	56	Aug. 23, 1935	Oct. 12, 1935	50	.24
...	500	227	273	8,756	72	—4	Aug. 23, 1935	Jan. 14, 1936	144	.229
...	460	305	155	8,469	71	17	Mar. 17, 1935	Apr. 1, 1936	15	.278
...	460	298	162	8,509	72	64	Mar. 17, 1935	May 2, 1936	46	.252
...	440	300	140	8,107	69	86	Mar. 17, 1935	May 28, 1936	72	.216
...	430	300	130	8,581	74	50	May 30, 1935	June 2, 1936	3	.246
...	430	297	133	8,176	71	80	June 18, 1935	June 25, 1936	7	.298
...	430	294	136	8,130	71	74	June 18, 1935	July 4, 1936	16	.281

DECLINE CURVES

Particular study was restricted to the south half of Turney Valley field. These 52 wells represent closed pressures ranging from the highest to the lowest in the entire field. Figure 2 is a semilogarithmic graph, on which the closed-pressure decline curves approximate straight lines. The pressures at the top of the graph are for the newer wells at the extreme south end of the field. The steepest declines shown are those for wells of the more closely drilled portion of the southern area. The curves at the bottom of the chart flatten, because this group of wells has been producing at a lower relative gas volume than the other wells shown on the graph.

Figure 3 shows decline of gas potentials, as indicated by government tests, for which each well

Production of Valley

By
G. R. ELLIOTT
Petroleum Engineer

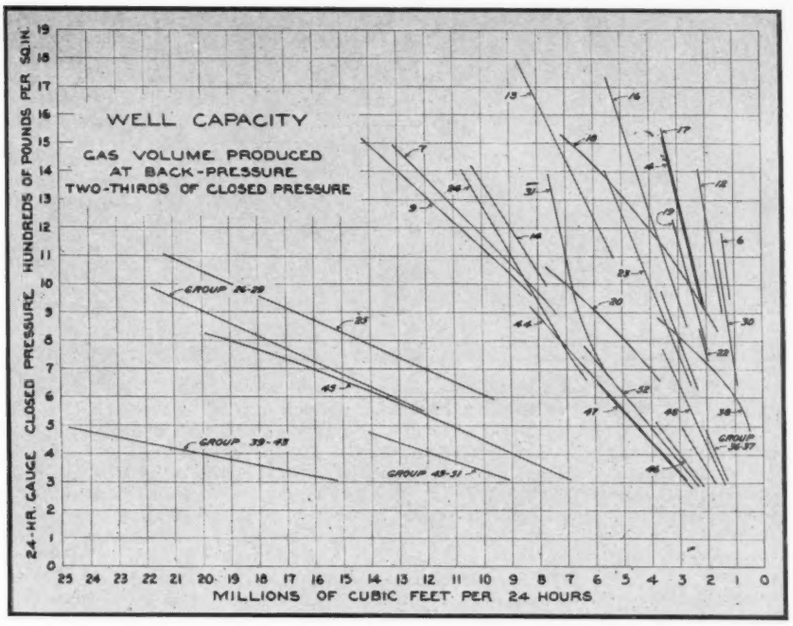

WELL CAPACITY
GAS VOLUME PRODUCED AT BACK-PRESSURE TWO-THIRDS OF CLOSED PRESSURE
24-HR. GAUGE CLOSED PRESSURE, HUNDREDS OF POUNDS PER SQ.IN.
MILLIONS OF CUBIC FEET PER 24 HOURS
GROUP 26-29
GROUP 39-43
GROUP 43-51
GROUP 30-37

Fig. 3—Decline of gas potentials

was produced with a back-pressure equal to two-thirds of its closed pressure. This graph was used to estimate the percentage of the gas potential of a well, being produced at the time of any given G.P.M. test.

The field being permitted to produce gas according to some stated basis, the decline of closed pressure is a condition about which very little can be done, beyond recording the fact. Closed pressure, or the reservoir pressure which it indicates, is the basic underlying factor, governing both separator recovery and gasoline plant recovery; or to state it more accurately, as far as this paper is concerned, actual gauged production of separator naphtha, and potential natural gasoline production as indicated by charcoal test.

The production decline curves (Figure 4) are plotted from two kinds of points: (1) Separator recovery (circles); (2) total of separator recovery plus tail-gas charcoal test (solid circles). The lower dash curve has been drawn through naphtha recovery points from the 1932 government tests, which were made at back-pressure of two-thirds the closed pressure. The lower main curve has been drawn through the various separator recoveries, mostly monthly averages, obtaining at the time of the quarterly charcoal tests of the tail-gas G.P.M.'s of the charcoal tests, most of them taken 1934 to 1936, are added to the separator G.P.M.'s to obtain the totals represented by the black circles, through which the upper curve is drawn. The two main curves represent an attempt to draw average or "normal" decline curves for a standard producing rate approximating the government gas quota (six-tenths of the potential from the latest annual test).

These curves record a decline in separator recovery from .08 gallon at 1,500 pounds closed pressure to below .01 gallon at pressures below 600 pounds. The corresponding tail-gas G.P.M.'s increase from .01 to .03 gallon. The resulting total declines from .09 gallon to below .04.

CAUSES OF VARIATION

On the decline-curve graph (Figure 4), the points are well scattered. The principal causes of this variation may be tabulated as follows:

1. Reservoir conditions at bottom of well.
2. Back-pressure; relation of the gas flow to the well's gas potential.
3. Differential pressure; the drop in pressure between bottom of hole and well-head, and between well-head and separator control valve.
4. Separator pressure.
5. Atmospheric temperature.
6. Accumulation of liquid in the well.

Most of these six modifying conditions affect only the measured production, or vary the proportions recovered in separator and absorption plants, respectively. Actual total yield of naphtha plus natural gasoline depends chiefly on 1 and 2, and of these only No. 2 may be artificially varied.

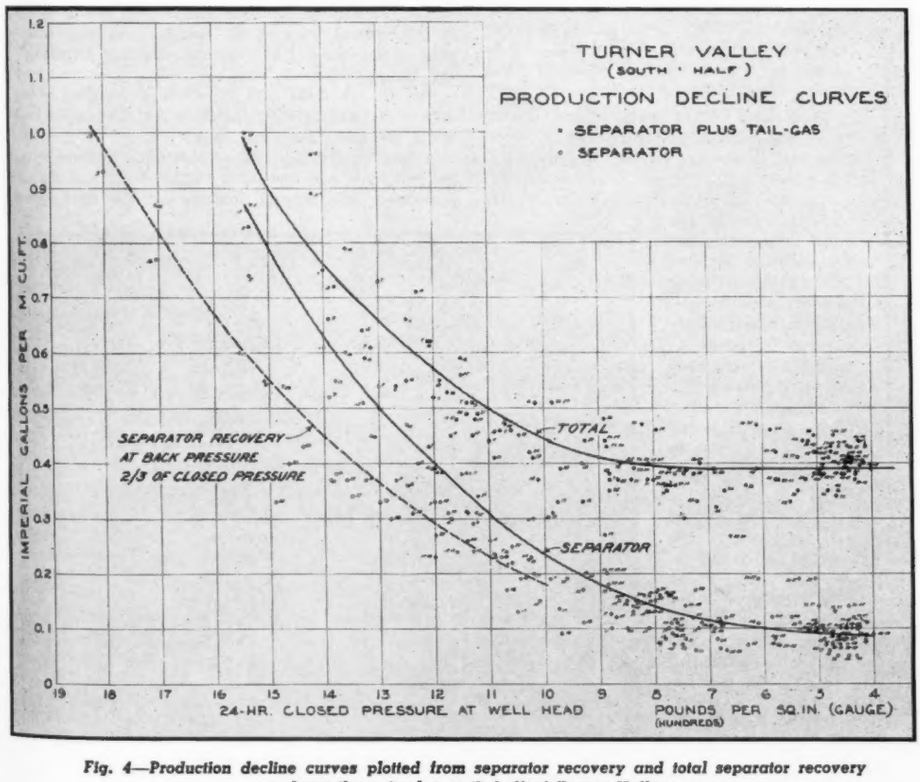


Fig. 4—Production decline curves plotted from separator recovery and total separator recovery plus tail-gas in the south half of Turner Valley

RESERVOIR CONDITIONS AT BOTTOM OF WELL

Figure 5 compares the production decline curves of two wells, whose variations may fall in the first class. These two wells seem to have been almost perfectly similar in every respect which might affect production, from the bottom of the well to the storage tanks. Yet curves for the two wells have shown comparatively wide divergence, although now after three years the two pairs of curves are drawing together. A possible explanation is as follows: No. 9 well may have reached the producing horizon closer to the overthrust sole fault than No. 7 well, since the fault abruptly terminates the producing horizon on the east. The drainage area for No. 9 being more restricted directionally than the area drained by No. 7, while the volume of gas is the same, would mean that the production from No. 9 must come from a longer distance than that from No. 7. Under these conditions, in the case of No. 9 a greater volume of gas would be required to move a barrel of naphtha through the formation to the bottom of the well. The present drawing together of the curves would suggest that drainage channels have been extended until there is sufficient communication between the wells to produce uniform conditions for production.

BACK-PRESSURE

Three examples of variation of individual wells from the normal curves are illustrated in Figure 6. Open circles represent monthly average separator recovery (G.P.M.); solid black circles are totals, separator G.P.M. plus tail-gas G.P.M., for the months when charcoal tests were made. The figure marking each point represents the relation of the gas volume being produced, to the well's gas potential, i.e., per cent of the theoretical government gas potential corresponding to the estimated closed pressure. These graphs are fairly uniform in indicating that the wider the well is opened, the lower the unit separator recovery; usually the largest per cent gas volumes correspond to the lowest recoveries. This corresponds to the conditions found in oil wells producing through casing. As the velocity through the formation is increased, the unit recovery of oil decreases; the gas is not permitted to perform as much work in moving the oil, as when moving more slowly. The most efficient gas-oil ratio apparently corresponds to a lower gas volume than the lowest practical operating volume, the gas velocity in the formation always being much higher than in a typical oil well.

The effect of back-pressure on tail-gas G.P.M. is not so obvious. Figure 7, primarily comparing conditions under two different separator pressures, also shows change of G.P.M. for various back-

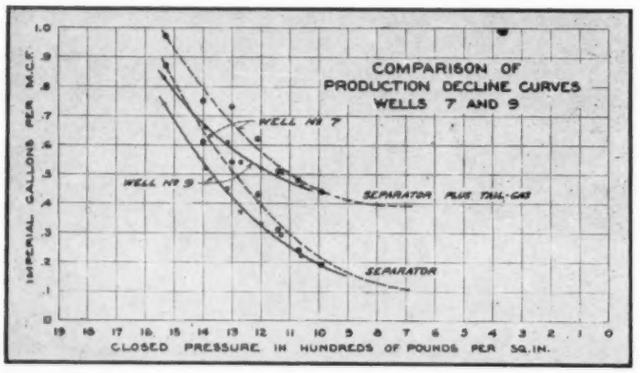


Fig. 5—Comparison of production decline curves for two wells almost perfectly similar in production respects

pressures. At 300 pounds separator, tail-gas G.P.M. remains fairly uniform for high and low back-pressures; at 150 pounds (which is below ordinary operating pressure), tail-gas G.P.M. increases as back-pressure is lowered. When the gas volume approaches and exceeds the capacity of the separator, which in these tests it does at only 150 pounds, the liquid carried over is apparently accompanied by sufficient vapor adsorbable by the charcoal, to give rise to progressive increase in tail-gas G.P.M. as the back-pressure is lowered.

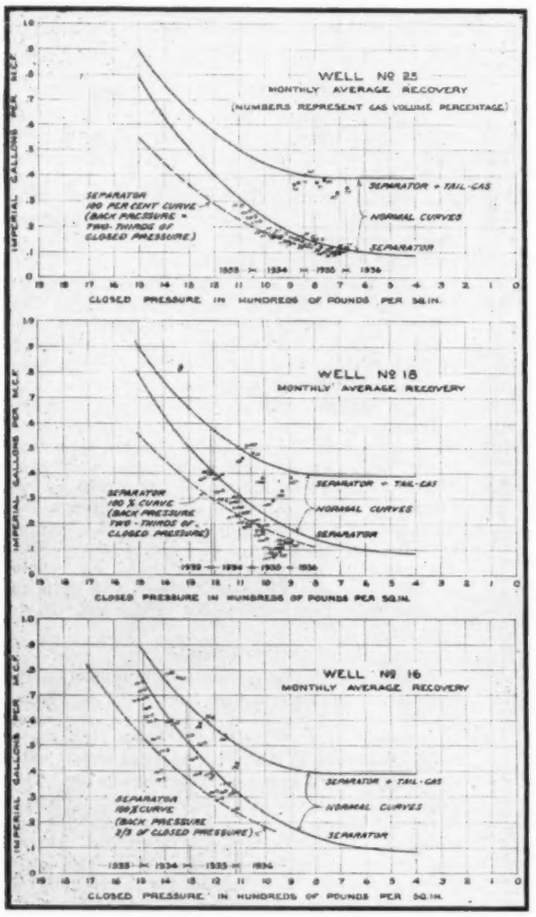


Fig. 6—Monthly average recovery from three wells as examples of variations from the normal production decline curves

DIFFERENTIAL PRESSURE

The drop in pressure between well-head and separator control-valve depends directly upon two pressures: Back-pressure and separator pressure. Back-pressure usually bears some relation to closed pressure, under quota conditions something greater than two-thirds. Therefore, with separator pressure remaining about the same, differential pressure declines with decline of closed pressure. The decline curves of Figure 4 might be plotted by using differential pressure instead of closed pressure.

Special production tests were carried out on well No. 25, at various per cent gas volumes, and at two separator pressures: 300 pounds and 150 pounds. Comparison of G. P.M.'s at those two separator pressures is given in Table 1 and in Figure 7.

Reduction of separator pressure from 300 to 150 pounds results in a much lower separator recovery, and a consistently larger tail-gas G. P.M., though the latter is not sufficient to bring the 150-pound total equal to the total at 300 pounds. Thus there is an apparent loss in total recovery between the 300- and the 150-pound condition. If the separator G.P.M.'s, instead of being based on tank gaugings, represented actual separator measurements under pressure, there would be a still greater difference between totals; because the liquid retained in the separator under 300 pounds pressure is subject to greater evaporation losses in the tank than is the liquid retained under 150 pounds pressure. This apparent loss in total recovery, resulting when the separator pressure is lowered from 300 to 150 pounds is due to the fact that at a pressure as low as 150 pounds, the separator's capacity is easily exceeded, and liquid hydrocarbons "pass over." This liquid is neither retained by the separator nor recorded by the charcoal, but nevertheless becomes gasoline production in the absorption plant.

ATMOSPHERIC TEMPERATURE

The effect of atmospheric temperature on gauged naphtha production is shown in Figure 8. The daily gauged naphtha is converted to imperial gallons per 1,000 feet of gas, and is plotted opposite the daily mean temperature in Turner Valley, averaged from hourly readings. Naphtha production is shown only for periods of comparatively uniform gas production, between 8,100,000 and 8,600,000 feet, about 70 per cent of the government potential. The separator pressure was maintained close to 300 pounds, except for the latter half of April when it was about 210 pounds.

The chart covers the months February to June, 1936, representing an extreme rise in temperature of 101° F., from 28° below zero to 73° above. The corresponding decline in separator recovery is .041 imperial gallon per 1,000 feet, from .123 to .082, or 33 per cent. For the same period the normal decline in separator recovery (Figure 4) would be from .108 to .102 G.P.M., or approximately 6 per cent. Therefore the net decline due to temperature is 27 per cent.

The effect of rise in temperature is more noticeable above 32° F. than below that point. From —28 to +32°, the production declined from .122 to .102, or .03 G.P.M. for every 10 degrees increase in temperature. From 32° to 37°, the production declined from .102 to .082, or .05 G.P.M. for every 10 degrees rise in temperature.

Days in May and June, which best illustrate sudden increases in production due to drops in temperature, are marked by the letters A, B, C, and D. Rapid changes in the opposite direction are also clearly illustrated. Following "A," a three-day rise in temperature of 25 degrees corresponds to a production decline from .112 to .090 G.P.M. Following "B," a 10-day rise in temperature of 28 degrees corresponds to a production decrease from .109 to .082 G.P.M.

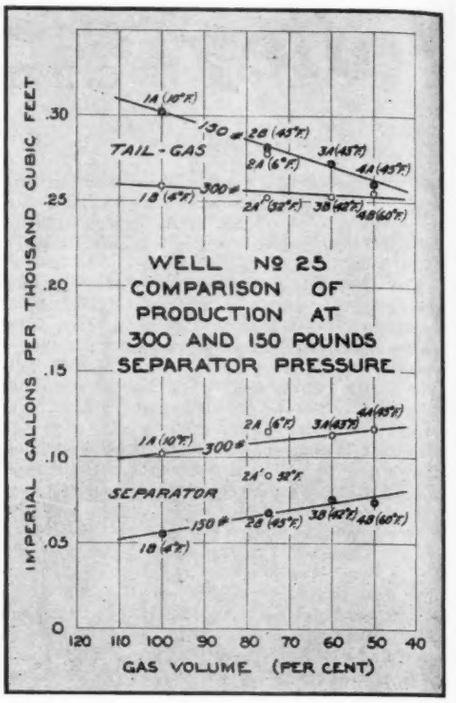


Fig. 7—Comparison of production at 300 and 150 pounds separator pressure for well No. 25

The effect of temperature on tail-gas G.P.M. is more elusive than the effect on separator recovery. The variation in separator G.P.M.'s arises mostly from tank evaporation losses, which are relatively large. The effect of temperature on tail-gas G.P.M. is best shown as a seasonal variation, and is illustrated in Figure 9. This graph represents quarterly charcoal tests on six wells, taken over a period of a year and a half, and showing July tests for both 1935 and 1936. G.P.M.'s for the four wells, 45, 36-37, 31 and 16, show a temporary increase for July, 1935; G.P.M.'s for the other two wells do not. The two lower curves (7 and 9) rise steadily during 1935 at about the normal rate, .06 per year, corresponding to the decline of closed pressure. The normal increase for the two upper

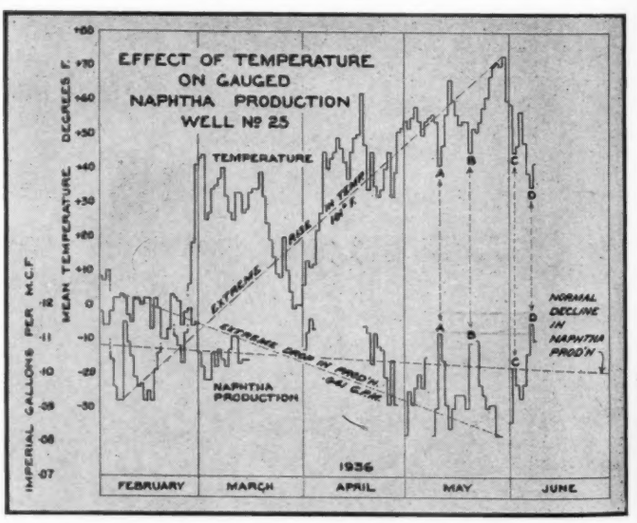
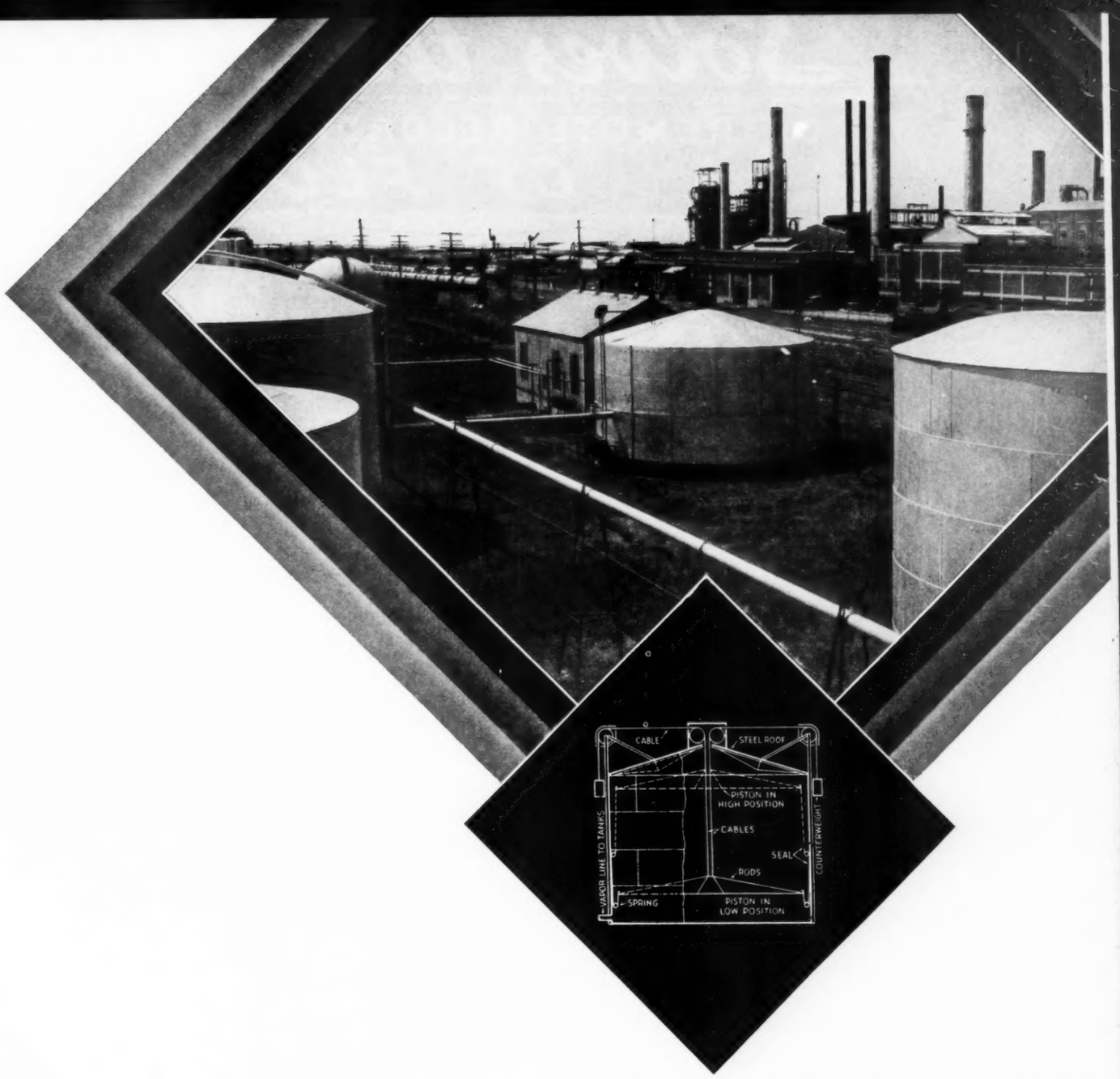


Fig. 8—Effect of atmospheric temperature on gauged naphtha production; the separator pressure being held constant



Wiggins Balloon ends waste of naphtha in solvent refining process!

REDUCTION of evaporation losses in connection with the refining of lubricating oils ordinarily is not a serious problem. However, there are exceptions—one being in the Ponca City, Oklahoma, plant of the Empire Oil & Refining Co., where naphtha disappeared at the rate of 600 barrels or more a month prior to the installation of the Wiggins Balloon which appears in the center of the above picture.

In this particular plant, naphtha is used in the process of treating lubricating oil. Transfer of the heated mixture to and from tanks was, quite naturally, accompanied by considerable loss of naphtha vapor. By putting in the Balloon and connecting it by a system of closed piping to a total of seventeen tanks and one rerun unit, the loss has been virtually eliminated. Records for the first four months show savings at a rate sufficient to pay for complete cost in less than a year.

Calculations showed space for 20,000 cu. ft. of vapor sufficient at the Empire plant; consequently, engineers selected the piston type of balloon construction instead of the flat double-diaphragm type which is used for larger capacities. The diagram shows a cross-section of the piston type Balloon. The seal is a tubular fabric, of which one end is attached to the inside of the shell of the balloon while the other is attached to the rim of the circular piston. Very slight pressure is sufficient to move the piston.

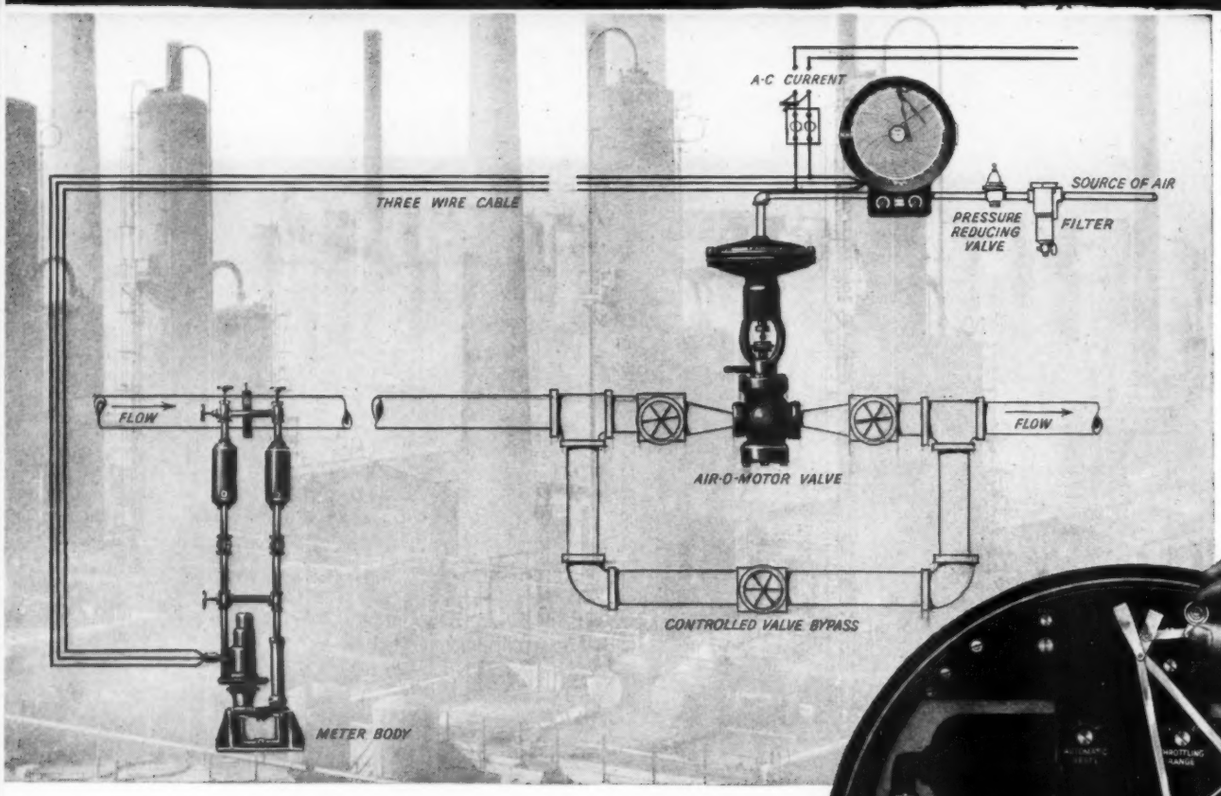
This is just one example of the many ways in which Wiggins Balloons are being used to reduce waste and increase profits. For detailed data and information about other applications, call or write our nearest office.

CHICAGO BRIDGE & IRON COMPANY

Dallas	1441 Dallas Athletic Club Bldg.	Cleveland	2204 Rockefeller Building
Houston	2919 Main Street	New York	3347-165 Broadway Building
Tulsa	1606 Thompson Building	Philadelphia	1615-1700 Walnut Street Building
Birmingham	1536 North Fiftieth Street	Boston	1517 Consolidated Gas Building
Chicago	2128 Old Colony Building	San Francisco	1054 Rialto Building
Detroit	1514 Lafayette Building	Los Angeles	1423 Wm. Fox Building

Fabricating plants in BIRMINGHAM, CHICAGO, AND GREENVILLE, PA.

Air-o-Line Solves the Problem OF REMOTE RECORDING AND CONTROL OF FLOW



"Tunes In" to PROCESS CONTROL as easily as dialing a radio.

A simple screw-driver adjustment of the graduated "Automatic Reset and Throttling Range Dials" gives you exact control of temperatures, pressures, flows and liquid levels.

There is no guesswork or dismantling of the instrument to obtain the desired control results. You can see how adjustments for different operating conditions can be noted and duplicated at any time.

Once adjusted, Air-o-Line is fully automatic.

Combines—

REMOTE FLOW RECORDING with AIR OPERATED CONTROL

In process flow control, where it is desirable to locate at a considerable distance, the recording controller from the point of measurement,—Brown Air-o-Line Flow Controllers operating on the "electric inductance bridge principle", fulfill every requirement for remote recording and positive control of flow in refinery processes.

The Brown Air-o-Line Flow Controller is the only electric flow meter that offers the desirable combination of electric recording with air operated control and remote control setting by means of a calibrated control index.

The air control mechanism of Brown Air-o-Line is mounted inside of the recorder case. A turn of the calibrated control index makes it possible to set the desired flow control at the recording controller, which is mounted on the centralized instrument control board.

Only Brown Air-o-Line flow-controllers offer this outstanding advantage—which saves time in putting the controller in operation and insures better coordination of flow with the other variables to maintain balanced operation.

Air-o-Line flow controller is suitable for working pressures up to 2500 lbs. per square inch—equipped with the well-known Brown interchangeable range tube features—Air-o-Line flow and liquid level controllers are easily adapted to meet any operating condition.

The graduated "throttling range" and "automatic reset" dials make it possible to "tune in" to process control as easily as dialing a radio. All that is necessary is to set the control index—"tune in" throttling range and automatic reset; once adjusted, Air-o-Line becomes fully automatic. Learn more about Brown Air-o-Line flow controllers. Write for information. The Brown Instrument Co., *a division of Minneapolis-Honeywell Regulator Co.*, 4488 Wayne Avenue, Philadelphia, Pa. Branches in all principal cities. Canadian Factory—117 Peter St., Toronto, Canada. European Address: N. V. N. Minneapolis-Honeywell Co., Wydesteeg 4, Amsterdam-C, Holland.

CALIBRATED CONTROL INDEX

Eliminates guesswork and frequent steps by setting the control index at the instrument.

Knob for setting control index is furnished inside case under lock to prevent tampering by unauthorized persons, or it can be furnished external so control index may be set without opening the instrument door. This applies whether case is mounted flush on panel or front-of-board.

BROWN AIR OPERATED CONTROLLERS

OUTSTANDING PERFORMANCE WITH SIMPLICITY

curves (45 and 36-37) is negligible, and that for the middle two (31 and 16) is .02 and .03.

The three curves, 45, 36-37, and 31, show a greater summer rise in 1936 than in 1935. This may be partly due to the greater difference in temperature between the April and July tests, approximately 60 degrees in 1936, compared with 45 degrees in 1935.

One would expect to find that sufficient expansion of a comparatively large volume of gas would tend to neutralize the effect of summer temperature, and the graph seems to indicate this. To compare the relative cooling effect, a factor has been derived by multiplying differential pressure (plus 10, to eliminate zeros) by gas volume in millions of feet. Definite summer variation appears in the curves of the first three wells, none of these having a cooling factor greater than 616, while the factors for the other two are over 4,000. The factor for No. 7 has declined to 693 in July, 1936, but, without a later test, it does not appear whether the G.P.M. is yet affected by summer temperature. At least it seems quite definite that, where the differential pressure is zero, increase in atmospheric temperature results in increased tail-gas G.P.M.

LIQUID ACCUMULATION IN THE WELL

The liquid which accumulates at the bottom of the well either is moved as liquid through the formation to the bottom of the hole, or liquifies in the hole as the gas expands from formation pressure to bottom-hole pressure. The gas volume and pressure of a well eventually reach the point, where there is not sufficient volume and velocity to carry this liquid continuously to the well-head. When this point is reached, it is customary to "blow" the well at intervals of days or weeks.

Well No. 25 is taken as an example to illustrate the effect of liquid accumulation. This liquid acts as an absorber, and gas which has passed through liquid in the well is leaner than gas coming from a hole free of liquid. Data to show this is given in Table 2 and depicted by Figure 10.

In April, 1935 (see Figure 10 and Table 2), a tail-gas G.P.M. test was taken when the well had not been blown for 243 days, and the result was .03 below the normal curve. The next test in July was taken only 13 days after a blow-down, and showed .08 above the normal curve. The next test in October, 50 days after blowing, was again .02 below normal, and in January, 1936, after 144 days, was .04 below normal. April 1, 15 days after blowing, falls on the normal curve. Two May points, 46 and 72 days after blowing, fall .03 and .06 respectively, below the normal curve. The June 2 test was taken three days after a semiblow, when the pressure was lowered enough to remove part of the liquid from the hole, but not enough to thoroughly clean the well out; thus we have this point coming half-way back, to .03 below normal. Seven days before the next test, June 25, the well was thoroughly blown, and this point rises to .02 above the normal curve. The last G.P.M. is on the way down again, with accumulating fluid.

Referring to the atmospheric temperature, shown opposite each G.P.M. point in Figure 10, it can readily be seen that the temperature effect has been very secondary to the effect of liquid accumulation. Whereas most of the graph shows G.P.M. changes corresponding in direction with temperature changes, there are more changes in the opposite direction, commencing with April, 1936.

What effect has liquid accumulation on daily separator production? Does separator G.P.M. follow a rule either of increase with liquid accumulation, or decrease with liquid accumulation? The first part of graph (Figure 10) would indicate that for uniform temperature, the separator G.P.M. increases with liquid accumulation, the opposite direction to the tail-gas. The separator G.P.M.'s vary as follows:

1935:	
January 31: 159 days' accumulation	.14
April 25: 243 days' accumulation	.15
July 8: 13 days' accumulation	.10
October 12: 50 days' accumulation	.095
1936:	
January 14: 144 days' accumulation (apparently follows temperature)	.120
April 1: 15 days' accumulation	.115
May 24: 46 days' accumulation	.090
May 28: 72 days' accumulation	.082

(The last two, instead of increasing because of increased liquid, decrease because of rise in temperature.)

Separator recovery may be somewhat increased by liquid accumulation, but the total of tail-gas and separator recovery is not increased. Examining some of the totals we find: For the 243-day accumulation, April 25, 1935, has the high separator recovery of .15, but a total of only .37, compared with .41 and .38 before and after; the 72-day point, May 28, 1936, shows separator G.P.M. .082, and total of only .298, compared with previous total .393 (15 days' accumulation), and following total .348 (three days' accumulation). Atmospheric temperature apparently exerts more influence on separator recovery, when measured by tank gaugings, than does liquid accumulation in the well.

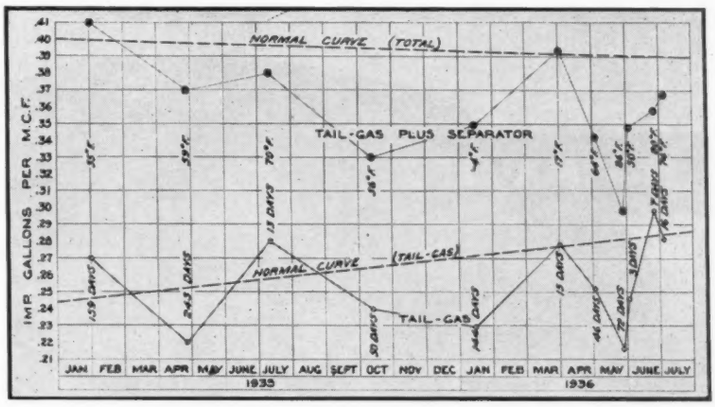

NORMAL CURVE (TOTAL)
TAIL-GAS PLUS SEPARATOR
NORMAL CURVE (TAIL-GAS)
TAIL-GAS
IMP. GALLONS PER M.C.F.
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY
1935
1936

Fig. 10—Effect of liquid accumulation on tail-gas G.P.M. for well No. 25

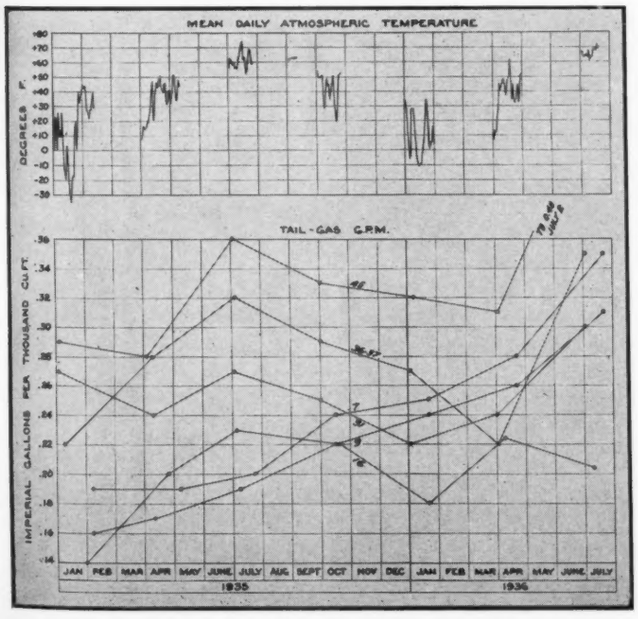

MEAN DAILY ATMOSPHERIC TEMPERATURE
DEGREES F.
TAIL-GAS G.P.M.
IMPERIAL GALLONS PER THOUSAND CU.FT.
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY
1935
1936

Fig. 9—Seasonal variations in tail-gas G.P.M.

CONCLUSIONS

With the exception of a few west-flank wells, excessively large volumes of gas accompany the recovery of liquid products, conditions somewhat corresponding to some "gas and distillate" wells in the United States.

The field has been controlled on a basis of gas quotas proportionate to each well's gas potential. Any method of reducing gas wastage reduces the operator's present income; gasoline plant requirements, diversity of ownership, and liberal gas quotas, result in rapid decline of reservoir pressure.

Considering only the crude production (72 gravity naphtha), the gas-oil ratio of a typical well increases between extremes of 40,000 and 400,000 feet per barrel over a period of six years. At the end of this period, about 4 bbls. of natural gasoline are recovered by the absorption plant for every barrel of crude naphtha produced.

Production decline curves show both crude naphtha and total (crude naphtha plus natural gasoline), in imperial gallons, per 1,000 feet, plotted against closed well pressure. Curve points are widely scattered, and most of this investigation is directed toward interpreting these variations.

Of six causes of variation, two only—reservoir conditions and back-pressure—affect the actual yield of liquid products; the others affect the measured production, or vary the relative proportions of naphtha and natural gasoline.

Reservoir conditions, such as porosity and permeability, are somewhat modified in Turner Valley by fracturing and faulting. Two wells, closely similar in all measurable respects, may show quite variant decline curves, seemingly because of differing characteristics of their drainage channels.

Officers, Executives and Program Committee A.P.I. 1937

The following officers, executive and program committee members for A.P.I. division of production, 1937, were appointed at the recent annual meeting:

CENTRAL COMMITTEE

Chairman, B. B. Wescott, Gulf Research and Development Co., Pittsburgh; vice chairman, John T. Hayward, Barnsdall Oil Co., Tulsa; secretary, C. A. Young, A.P.I., Dallas, Tex.; Topical Committee on Drilling Practices: Chairman, C. E. Reistle, Jr., Humble Oil & Refining Co., Houston; Topical Committee on Production Practice: Chairman, B. H. Robinson, General Petroleum Corp. of California, Los Angeles; Topical Committee on Production Technology: Chairman, H. H. Power, University of Texas, Department of Petroleum Engineering, Austin, Tex.; Topical Committee on Materials: Chairman, C. W. Frome, Union Oil Co. of California, Santa Fe Springs, Calif.; Special Study Committee on Well Spacing: Chairman, M. Albertson, Shell Petroleum Corp., Houston. Doctor Wescott, chairman of the Central Committee, has appointed the following executive committee for 1937:

Chairman, B. B. Wescott; vice chairman, J. T. Hayward; secretary, C. A. Young; members, M. Albertson; J. C. Askam, Ohio Oil Co., Findlay, Ohio; C. W. Frome; H. N. Marsh, General Petroleum Corp. of California, Vernon, Calif.; C. V. D. Marx, Standard Oil Co. of California, San Francisco; T. V. Moore, Humble Oil & Refining Co., Houston; H. H. Power; C. E. Reistle, Jr.; B. H. Robinson; F. E. Wood, Standard Oil Co. (Indiana), Chicago.

PROGRAM COMMITTEE

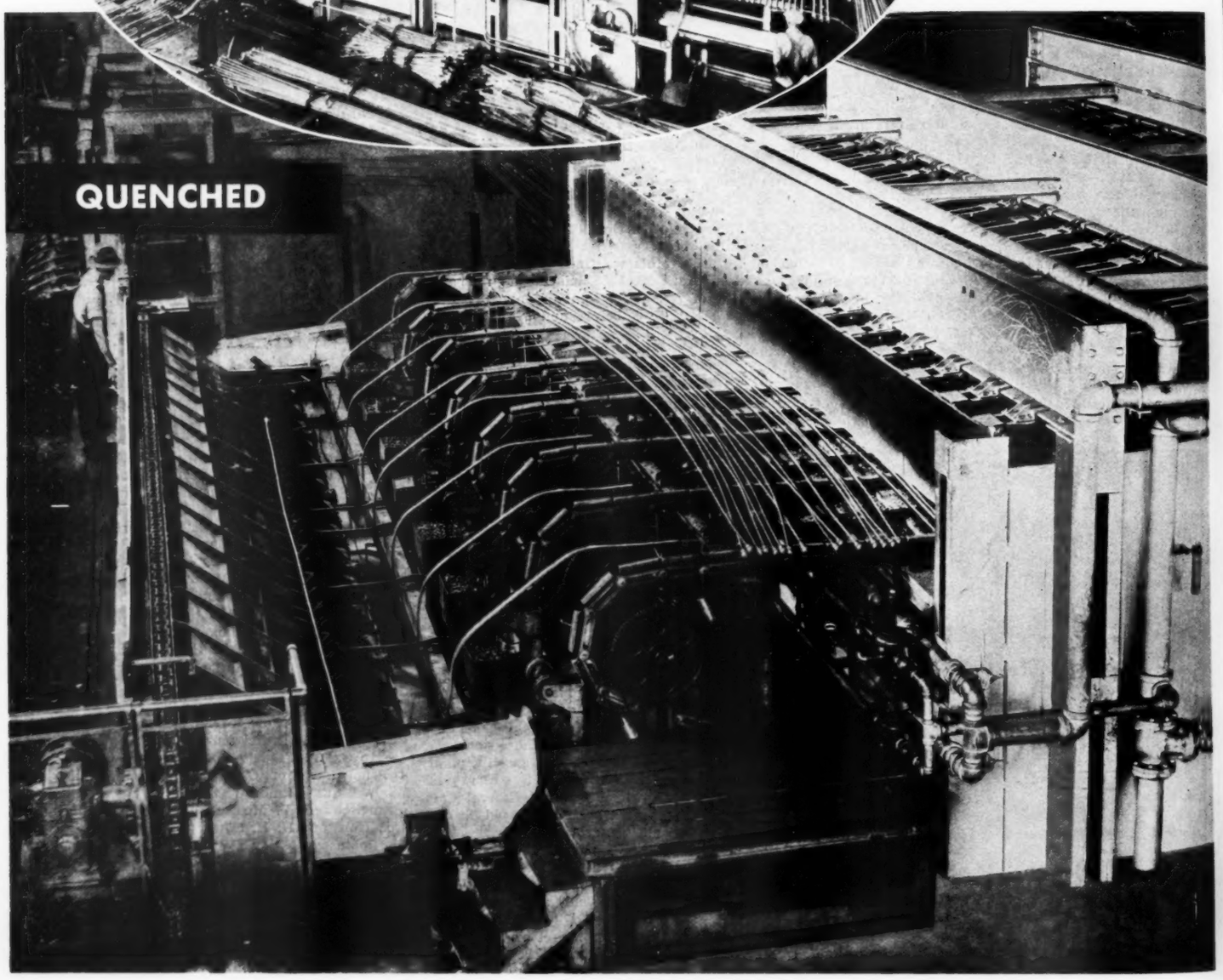
Chairman, J. T. Hayward; secretary, C. A. Young; members, M. L. Haider, Carter Oil Co., Tulsa; H. H. Power; H. C. Pyle, Union Oil Co. of California, Los Angeles; C. E. Reistle, Jr.; B. H. Robinson; B. B. Wescott (ex officio).

Only "OILWELL"

EXACTING PROCESS *control follows the sucker rod steel from the ore through smelting and steel-making into scientific upsetting to insure proper grain structure and flow. Heat-treatment starts in this huge normalizing furnace where "OIL-WELL" sucker rods are normalized over their entire length in one heat.*

• • •

AFTER NORMALIZING, *the fully heat-treated rods are quenched (over their entire length in one heat) at the precise temperatures of the steel and of the quenching fluid which combine to give the best physical properties for the service recommended.*



can say, "NORMALIZED, QUENCHED *and* DRAWN"

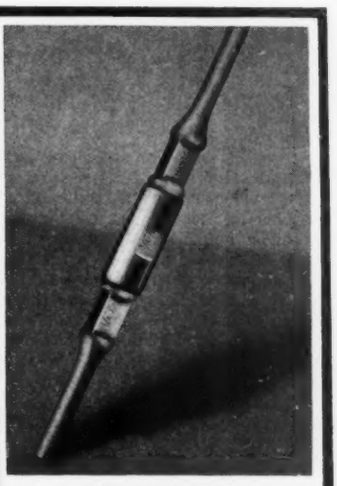
And only "OILWELL" has heat-treating facilities to give you the exact sucker rod you need

YOU can't pump oil wells economically unless the sucker rods have the chemical and physical properties best suited for the service requirements. The highest physical values for sucker rod steels can be obtained only by the normalize, quench, and draw process.

This full heat-treatment process is an exclusive "OILWELL" development and the manufacture of our sucker rods is protected by basic process, product, and equipment patents.

"OILWELL" Fully Heat-Treated Sucker Rods render maximum service. That is why we say — look to "OILWELL" for the best in sucker rods.

THE RODS, *after normalizing and quenching, are drawn (over their entire length in one heat) and proof tested. The rods are now tough and ductile—to the proper degree for sucker rod service—and of uniform quality from end to end.*



SUCKER ROD ENGINEERING SERVICE

"OILWELL'S" metallurgically and mechanically trained engineers are thoroughly qualified to analyze your sucker rod and pull rod problems. They will assist you in every way and specify the grade of rod best suited for your service requirements. Maximum economy and operating efficiency are available to those who make use of "OILWELL'S" thoroughly reliable field engineering service and fully heat-treated sucker rods.

OIL WELL SUPPLY COMPANY

Subsidiary of United States Steel Corporation

Branches in All Oil Fields

"OILWELL"

Many Formations in Illinois Have Oil Possibilities

By T. P. SANDERS

The accompanying isometric block diagram shows the stratigraphy through the Illinois Basin between St. Louis and the southeastern Illinois oil field as set forth by Alfred H. Bell, geologist and head of the oil and gas division of the Illinois State Geological Survey. The work of the survey has played an important part in bringing about and localizing the activity now in progress in the Illinois Basin, since it has been the policy of M. M. Leighton, chief of the survey, to emphasize the economic aspect of geologic research in Illinois.

The La Salle anticline shown at the eastern side of the block section is the structure upon which the southeastern Illinois oil field is situated. This field has produced oil for almost 30 years. The La Salle anticline can be traced for 240 miles through Illinois. To the east of the anticline's axis the dip of the formations is more gentle than on the western flank, and the basin east of the anticline is shallower and covers a much smaller area, most of which is in Indiana. The Rough Creek fault zone separates these basins of Illinois and southwestern Indiana from the Kentucky Basin to the south, which covers a rather small portion of western Kentucky; but is nearly as deep as the Illinois Basin.

These three sections make up what is known as the Eastern Interior Coal Basin.

EASTERN INTERIOR BASIN

In the Eastern Interior Basin more strata favorable for the accumulation of oil and gas was laid down than in the Michigan Basin, where in recent years many reservoirs have been discovered. However, advantages were found in Michigan which attracted wildcatters to that area in preference to the Illinois Basin. Most essential among these advantages was the fact that the Dow Chemical Co. had drilled many brine wells to the Marshall formation in central Michigan. The well logs, supplemented by some seismograph data, made it possible to map the subsurface structure through a large portion of the basin with a fair degree of accuracy. This, of course, served to confine the drilling to structural "highs," resulting in more efficient wildcatting. More recent drilling in Michigan has been encouraged by the fact that the approximate depth of the prolific Dundee limestone was known practically everywhere, and since it does not lie at a great depth, the drilling of a wildcat has not represented the risk of so large an investment as in the Illinois Basin. It is mainly the depth at which the large pay zones are expected to lie that has prevented more extensive wildcatting from taking place in Illinois after millions of acres have been leased.

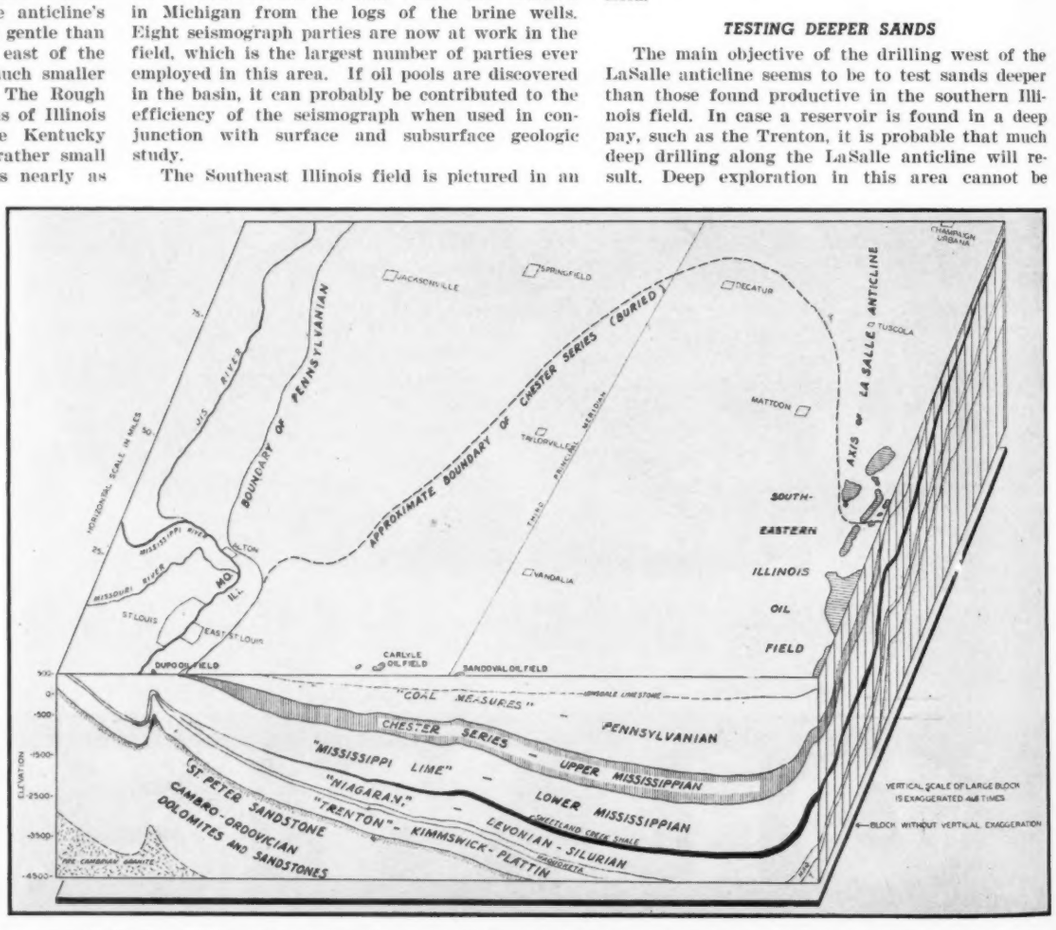
Leasing is still very active in the Illinois Basin, although a considerable portion of the desirable acreage is securely held in large blocks assembled by the large companies. These blocks, however, are quite widely separated, and they do not represent solid leasing, but intense checkerboarding. Properties not already leased within the limits of one of these large blocks are considered attractive acreage by smaller concerns and individuals wishing to acquire an interest in the play. Seismograph work will evidently continue to play an essential part in the exploration of the basin, for it must furnish the data which was obtained in Michigan from the logs of the brine wells. Eight seismograph parties are now at work in the field, which is the largest number of parties ever employed in this area. If oil pools are discovered in the basin, it can probably be contributed to the efficiency of the seismograph when used in conjunction with surface and subsurface geologic study.

The Southeast Illinois field is pictured in an accompanying block diagram. It has produced more oil than any other field east of the Mississippi, and only four fields in the United States were credited with greater total production at the beginning of the present year. From the time of its discovery in 1906 until the close of 1935, this field produced a total of 411,265,000 bbls. of oil. Its closest rival east of the Mississippi is the Bradford pool of Pennsylvania which had produced 316,268,022 bbls. The four bigger fields are the East Texas field, the Midway-Sunset field, the Greater Seminole field, and the Long Beach field. The Oklahoma City field may sometime outclass the Southeast Illinois field and the Bradford field since it had produced 298,511,513 bbls. at the end of 1935, and the rate of production was still high.

The Southeastern Illinois field, like the Greater Seminole field, is made up of several closely grouped productive areas, and oil is produced from several formations. About 60 per cent of the production has been obtained from the lenticular and shoestring sands of the lower Pennsylvanian, such as the Robinson sand, which is productive over a large part of Crawford County. Pay zones in the Chester and the Big lime of the Mississippian section have also accounted for considerable production. The most prolific section of the field has been the Lawrence County field, which has accounted for over half of the field's total production. Here the recovery per productive acre has averaged 8,849 bbls., which is considerably higher than the field average. This may be accounted for by the fact that there are several productive horizons in this area. The average Lawrence County well is still a larger producer than the average well of other parts of the field. It pumps slightly more than 1 bbl. per day, while other sections have an average which is more nearly equal to that for the state of Illinois, which is .80 of a barrel per day. About 20,000 wells have been drilled in the Southeast Illinois field.

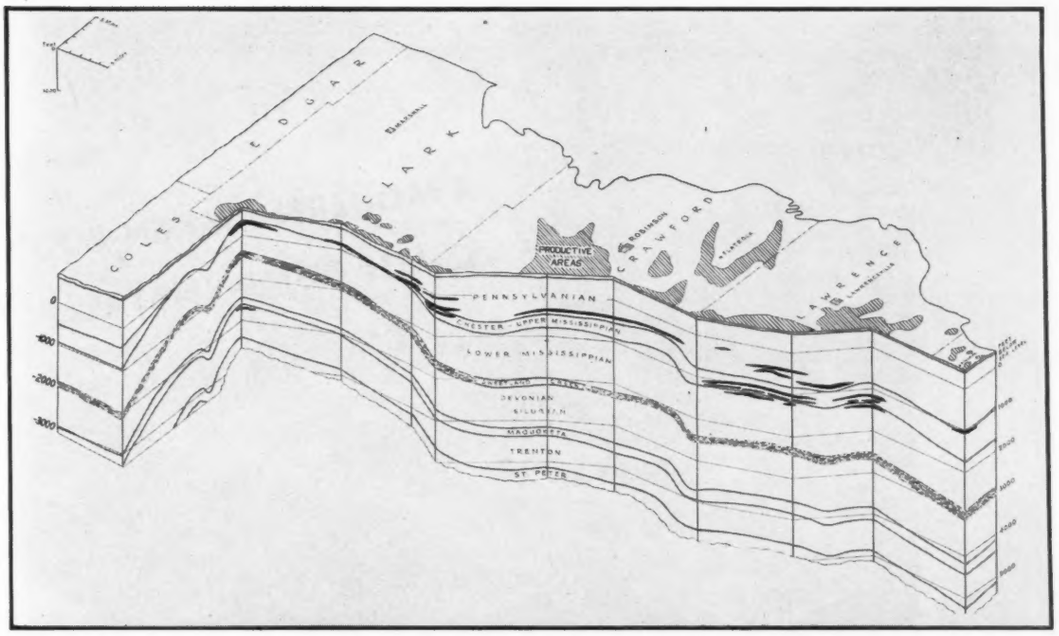
TESTING DEEPER SANDS

The main objective of the drilling west of the LaSalle anticline seems to be to test sands deeper than those found productive in the southern Illinois field. In case a reservoir is found in a deep pay, such as the Trenton, it is probable that much deep drilling along the LaSalle anticline will result. Deep exploration in this area cannot be



Block diagram of part of the Illinois Basin as set forth by Alfred H. Bell, geologist and head of the oil and gas division of the Illinois State Geological Survey at Urbana, Ill.

done by deepening the shallow wells of the southeastern field, because of the small diameter of the shallow holes. Deep tests in and around the field will all have to be drilled from the surface. One such test was drilled in 1921 when operators in the field cooperated to form the United Producers Oil Co. which drilled No. 1 Jones in section 12, of Robinson Township, Crawford County. The test found the top of the Mississippi lime at 1,428 feet, which was about 1,300 feet in thickness. The top of the Trenton was logged at 4,243 feet. Oil shows were found in the bottom of the Mississippi limestone at 2,685 feet, and in the top of the Niagara limestone at 2,900 feet. No water was encountered below a depth of 2,500 feet, but in spite of this favorable condition the test had to be discontinued at 4,620 feet because a heavy derrick had not been provided and the load was too great on the light equipment in use. Thus the St. Peter and deeper strata were not tested. Also, the test was unfavorably located. It had been proposed to drill it on the crest of the anticline. However, in order to make the test worthwhile, it was essential that the United Producers Oil Co. should lease a large block near the location. At that time many good wells were producing from the shallow sands on the crest of the structure, which made it economically impossible to obtain this acreage for wildcat purposes. The block obtained was therefore unproductive in the shallow sands. The oil shows logged in drilling the test may very likely signify the presence of commercial oil deposits in the deep sands below the southeastern field where structure is favorable for accumulation.



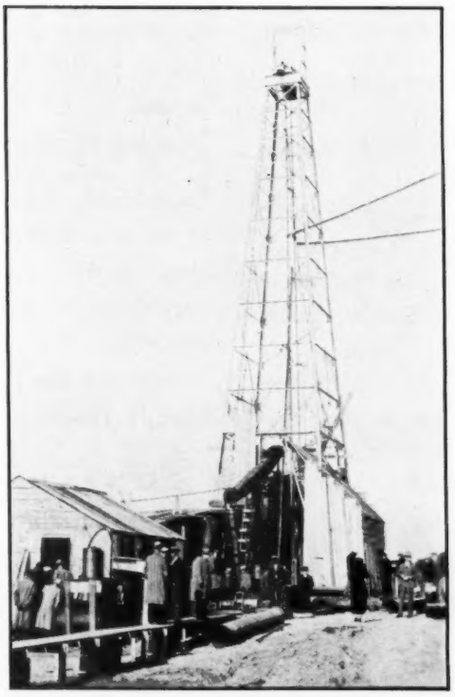
Block diagram of the southeastern Illinois oil field by Alfred H. Bell. The vertical scale is exaggerated 21 times. Productive zones are shown in black

Studies of several cores made recently in the southeastern Illinois field indicate that on the average only 10 to 15 per cent of the oil has been removed from the known producing zones. This figure seems to have been based on an insufficient number of core analyses, so it may be high. However, some operators hold the belief, which is not unreasonable, that under favorable economic conditions another 400,000,000 bbls. will be recovered from the field. This would call for repressuring with air or gas, or water-flooding. For several years secondary recovery methods have been used, but always in an experimental manner. Some very encouraging results have been obtained, but there are three factors preventing any extensive use of secondary recovery methods at present, and there is little hope that these considerations will be overcome in the near future. The first consideration is the economic angle. The price of oil in southeastern Illinois is at present one-half of that obtained in the Bradford field where secondary recovery methods on a large scale have been found profitable. Also, wells drilled to these shallow sands in Illinois require three strings of casing, whereas in the Bradford field only one is required; and new wells would be needed for a well-organized water-flooding or repressuring program. The second consideration is the lack of the necessary knowledge pertaining to the pay zones to conduct a program properly. The wells were drilled 30 years ago and no interest was taken in the characteristics of the pay sands. Since they are lenticular it is often uncertain which beds the various wells on a lease are producing from. Under such conditions few operators feel justified in advocating the heavy investments necessary for repressuring or water-flooding on a large scale. Probably quite a few cores will have to be taken through the producing zones before sufficient information is available to make the use of secondary recovery methods any more than a haphazard experiment. Also, data available at present shows the average sand section to be broken and irregular, so that the success of repressuring would be questionable in many of the pay zones. The third consideration is the extensive use of vacuum on casing heads, which always tends to discourage the use of repressuring on small leases.

Practically all of the repressuring projects so far undertaken in the southeast Illinois field have used compressed air as the expulsive medium. It has usually been found, however, that the injection of air in the pay increases the gas production to an extent where gas can later be supplied to the compressors in place of the air.

Sands in the southeastern Illinois field have shown evidence of a natural water drive in some areas. The drive seems to be of an unusual type, with the water radiating from a small area in almost all directions. The greatest rate of encroachment noted has been about 800 feet in five years, which is approximately the same as in the Earlsboro field of Oklahoma where water required three years to find its way from one location to the next. The Illinois field also has several noticeable cases of accidental water-flooding, which were caused by defective casing in wells allowing the water from upper formations to run into the pay sands. It is believed that the natural flooding can be distinguished from the accidental flooding by its effect.

Recently a well was deepened to a deeper producing horizon and its production was raised from 1 bbl. to 25 bbls. per day. However, when several other wells on the same lease were deepened they failed to find the productive horizon. Nevertheless, with so many lens-shaped pay zones in this area there are undoubtedly many wells that could profitably be deepened. It is expected that there will be considerable work of this kind done in the near future and this will result in additional recovery from this area where it is evident that much oil remains in the ground.



Pure Oil Co. No. 1 George Bradley, located in Wayne County, Illinois; the first test to result from the extensive leasing in the Illinois Basin

Oil Conservation Public Need, J. R. Suman Tells Texans

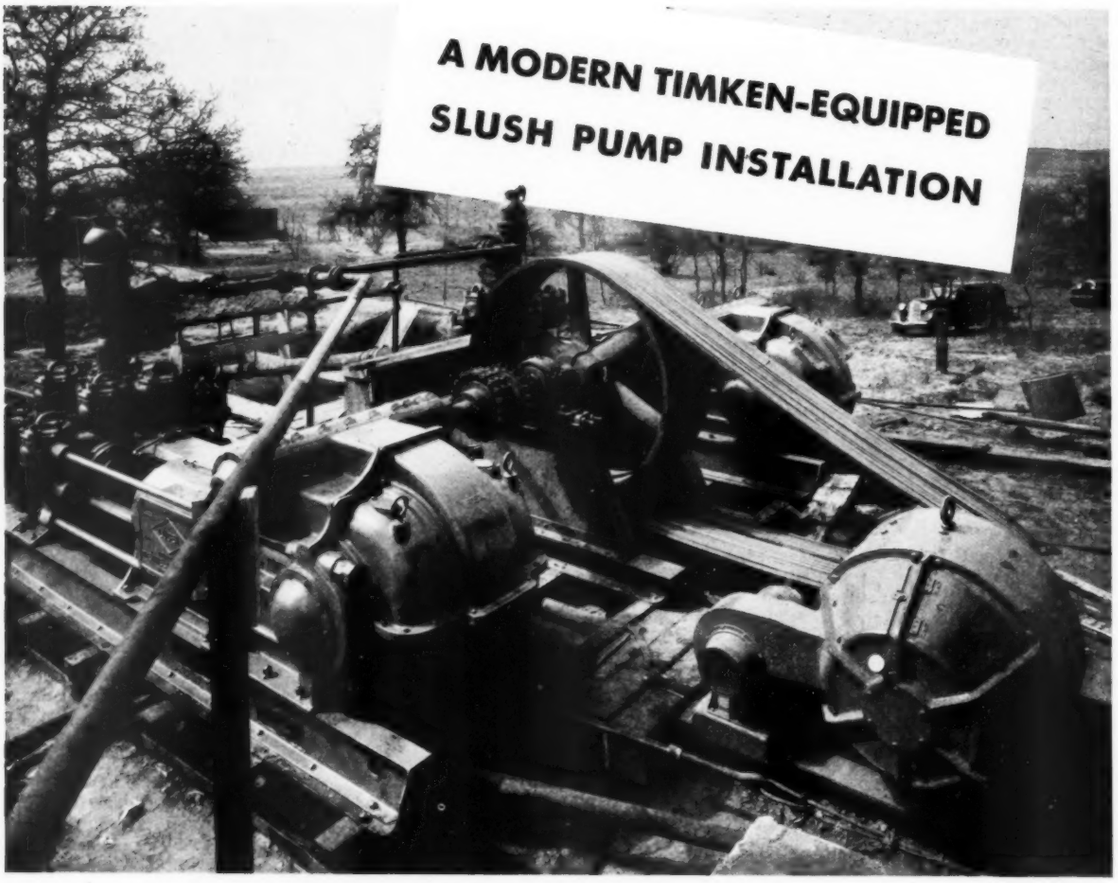
HOUSTON, Tex., Nov. 28.—Rule-of-thumb methods in the oil industry have passed, J. R. Suman, vice president of the Humble Oil & Refining Co., told the engineering section meeting of the Association of Land Grant Colleges and Universities convention.

"Through the application of scientific knowledge the industry has been able to build up a discovered reserve of 13,000,000,000 bbls. of oil in the United States," he said. "It will be necessary to find approximately 1,000,000,000 bbls. of reserve per year in the future to maintain our reserves at the present rate of consumption.

"Without the development of cracking processes by which both quantity of recovery and quality of gasoline are increased, the present known reserves in the United States would have been consumed by this time.

"The proper management of oil properties requires that all possible diligence be shown in the development and application of scientific knowledge for the best ultimate good due to the diverse nature of interests in its operation. In the production of oil there are three interested parties—society as a whole, the royalty or landowner and the leaseholder or exploitation company.

"During the last 30 years there has been a gradual but definite change in our conception of the public rights as related to our natural resources. Natural gas and oil are recognizable as irreplaceable natural resources and the efficiency with which they are removed from the reservoir is now considered of vital interest."



Wherever you may go in the oil fields you will find Timken Bearing equipment keeping production up and production costs down.

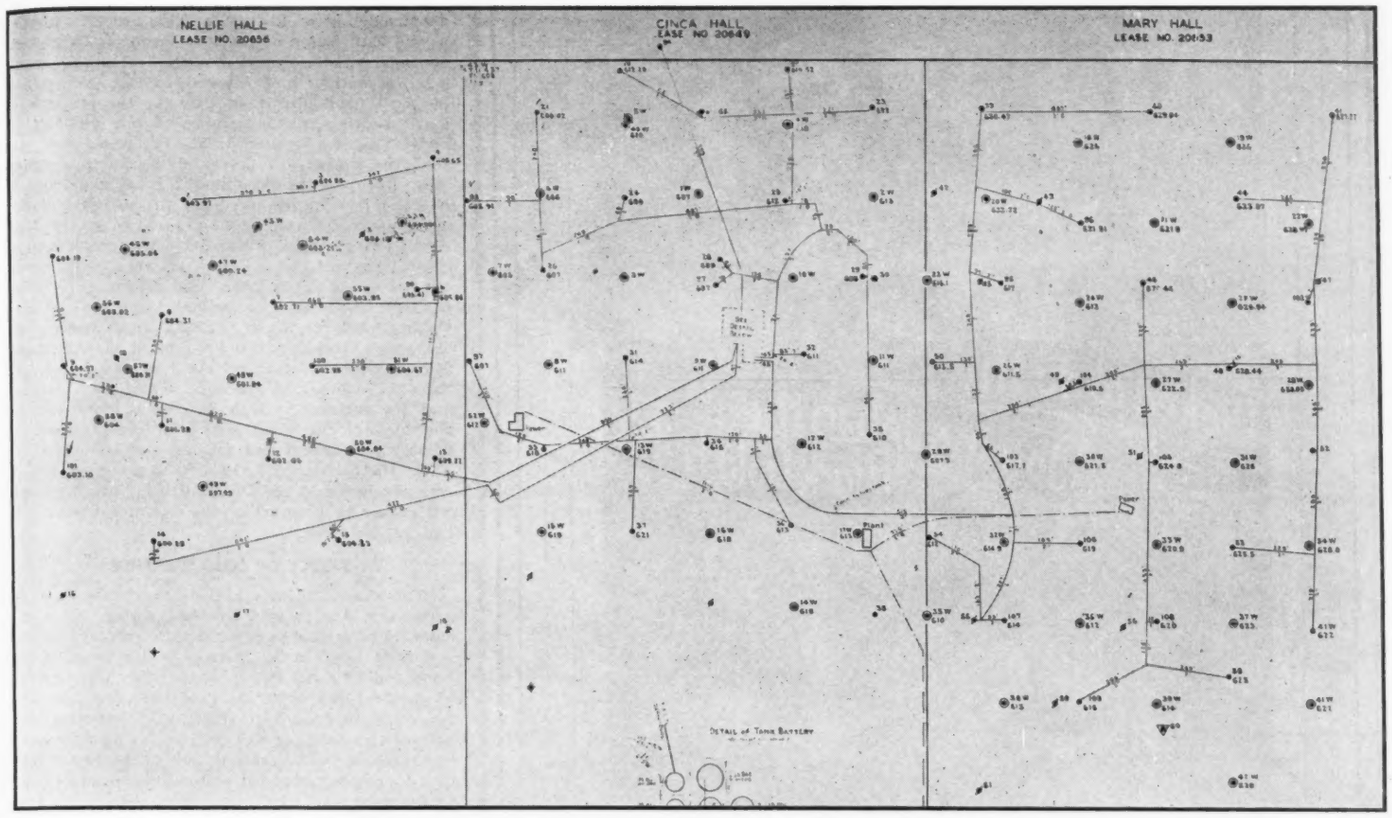
The above photograph shows Lucey Type HP-15000 7¾"x18" Duplex Power Driven Slush Pumps in operation at the Denver Producing and Refining Company's Sah-Cum Well No. 1 near Binger, Oklahoma. These pumps are equipped with Timken Bearings on the crank shafts and pinion shafts — 4 bearings on each shaft. The Lucey Jack Shaft through which the pumps are being driven by the 275 H.P. Allis-Chalmers motor is also Timken-equipped, being mounted on Dodge-Timken pillow blocks.

"Mercury," New York Central Lines . . . . one of the latest Timken-equipped Streamliners

Dependable, power-saving performance in modern oil field equipment—engines, draw works, swivels, rotaries, pumps, crown blocks, traveling blocks and all other kinds of equipment—is closely associated with the use of Timken Bearings. Specify Timken-equipped.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *TAPERED ROLLER* BEARINGS



Plat of Carter Oil Co.'s water-flood project in the Nowata field, showing water wells and gathering system

Results of Five Years Flooding in Nowata by Carter

By PAUL REED

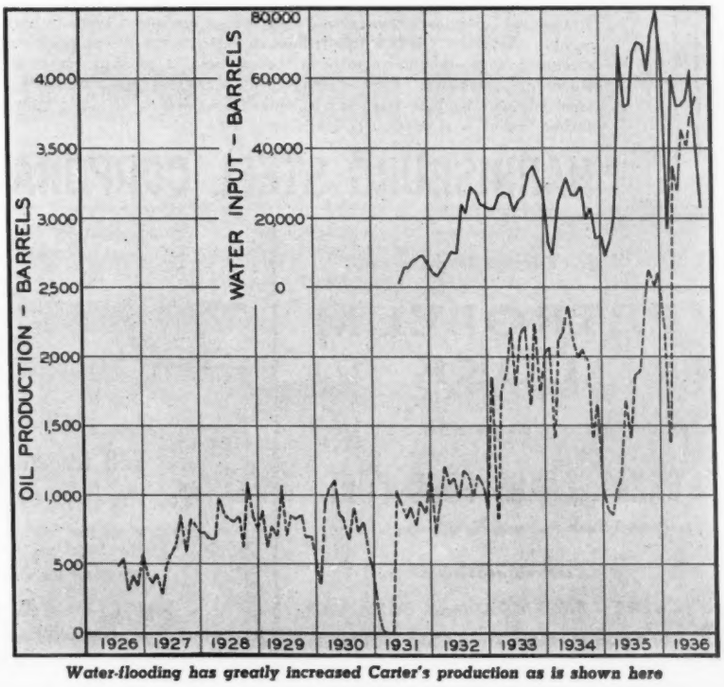
The results of the Carter Oil Co.'s water-flooding operations in the Nowata field, Oklahoma, not only furnish a record of the earliest experiment conducted on such a scale with this method of secondary recovery in the Mid-Continent, but they also show what has been encountered in this kind of venture over a period of five years.

Started in a small way in 1931 under the direction of Burt H. Collins with a few available wells, the operations have been gradually extended to include 125 acres. In the course of doing this the problems of flooding have been faced and the solutions worked out which seemed to be appropriate for the conditions.

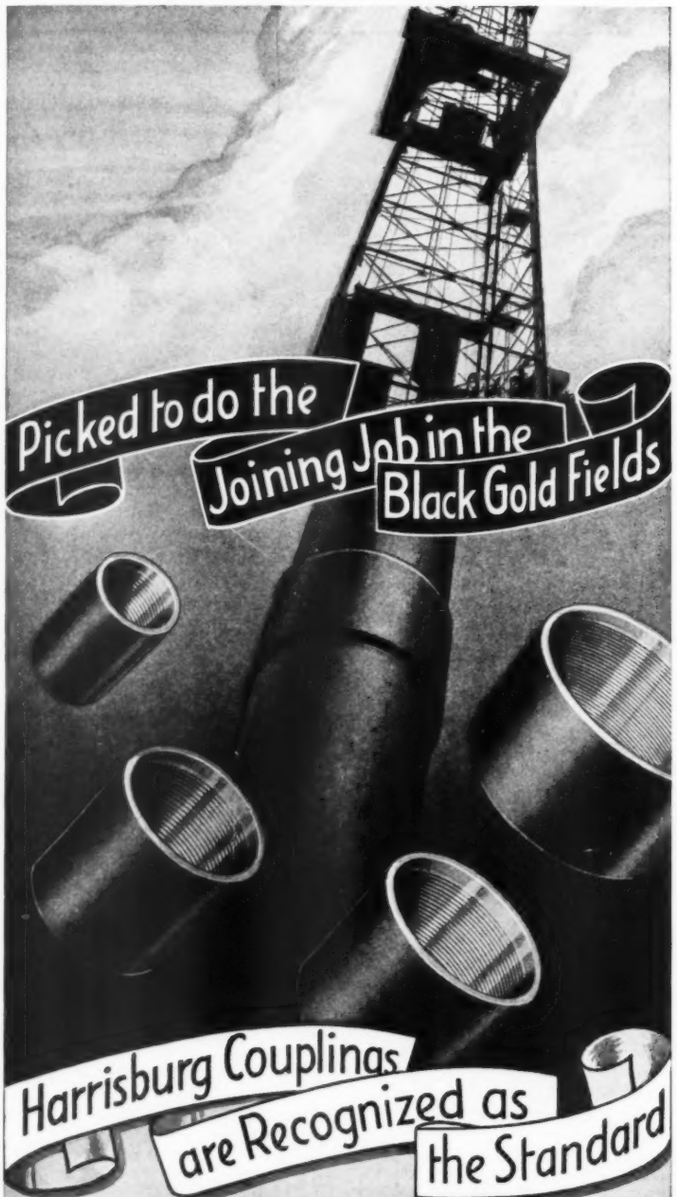
In the course of doing this, approximately 90,000 bbls. of oil have been produced, of which 70,000 bbls. have come from less than 40 acres, where the yield may be roughly considered to amount to about 2,000 bbls. to the acre. Although greater per acre yields have been obtained in a little more than a year in operations located 14 miles north, the difference in sand conditions must be taken into consideration in making a comparison, as well as the exigencies of any essentially experimental undertaking. The particular acreage which shows the largest production to date is in the part of the Cinca Hall lease where Burt H. Collins started flooding operations in the spring of 1931, one of the most depressed periods of the oil industry. Estimates of the total amount of oil recoverable by flooding are given as 3,000 bbls. per acre. These estimates are based on the examination of about 30 cores taken between 1931 and 1935 which indicate that the total oil in place, when flooding began, was 13,000 bbls. per acre. Analysis of the cores of a group of nine wells shows porosity 14 to 19; permeability 37 to 230 millidarcys; average saturation 35 per cent. Another group of eight wells had cores with permeability between 25 and 181. Between the time the field was originally drilled in 1906 and the time that flooding began, it is believed that less than 3,000 bbls., possibly not more than 2,500 bbls. were recovered by the usual production methods.

In looking at the accompanying curve it can be seen that although the production has not been large it has steadily increased as more and more of the property has been flooded and as the water drive has become more effective. Several different phases of operation and development are also manifested in this data.

The increase in oil production occurring in the period of 1927 to 1930 is due to repressuring with



Water-flooding has greatly increased Carter's production as is shown here



Seamless steel couplings get their big test in the oil fields—where tremendous strains and relentless chemical and abrasive actions are at work to undo the most careful assemblies. It is a fine tribute to Harrisburg—the originator of seamless steel couplings—that universally in the oil fields Harrisburg couplings are considered the standard. Look also to this leading source of seamless and forged steel products for pipe flanges, bull plugs, pump liners, drop and hollow forgings, carbon and alloy steels : : Harrisburg, Pa.

HARRISBURG STEEL CORPORATION

air through seven key wells. This property, known as the Hall leases or the Bole group, is located in section 22-24-16, Rogers County, Oklahoma, about 3 miles southwest of Alluwe and it was acquired by the Carter Oil Co. in 1926 for the purpose of experimenting in the mining of oil. Instead of mining it was at first decided to repressure. In 1931 the Carter Oil Co. entered into a contract with Burt Collins providing for his acquiring a half interest in the property in case the water drive succeeded, which he was to supervise. In April, 1931, a small water drive was started on a central part of the lease, in an area of 30 acres on the Cinca Hall lease was producing 6 bbls. per day. Flooding was gradually extended by Mr. Collins until his death in 1932, after which, operations were conducted by Donald P. Oak until 1934 when the Carter Oil Co. regained possession through purchase of the outstanding half interest and its engineer, Ralph E. Damp, was put in charge. After a short shutdown period, development was resumed and drilling was completed in 1935. On November 1, 1936, this group of leases was purchased by the Whitehill Oil Corp. together with other holdings which the Carter company has had in this area.

EFFECT OF COLD WEATHER

The sharp declines noticeable at the first of each year, due to cold weather, reflect the difficulty in bringing back production after flooding had been temporarily halted. Water lines to the input wells did not freeze because they were buried 18 inches. But since the lead lines froze it was necessary to curtail production by reducing the pressure by stopping and restricting the volume of input water. Sometimes it has taken two weeks to a month to pump off water after a shutdown; two months would be consumed in getting the production back and it was sometimes April or May before normal production was resumed. If the experience of flooding this property could be repeated, water lines and lead lines would be buried in the same ditch.

From the first experiments with flooding five years ago on the Cinca Hall lease where existing wells were used for the test, flooding has spread out over the effective floodable area of 125 acres until it includes at the present time, 58 producers and 53 water input wells. Since 1931, 21 producing wells have been plugged and abandoned; 2 water input wells have been plugged. The plan of the five-spot pattern has been followed but without an attempt at geometrical exactness. The purpose has been to have input wells equidistant from producers. Spacing as a rule is 312 feet from water well to water well and oil well to oil well. This makes a distance of 220 feet between water well and oil well.

The producing formation is a lens of the Bartlesville sand on a structure that dips from west to east, the top of the sand being reached on the Nellie Hall lease at a depth of 360 feet; in the east part of the property it is found at 410 feet and somewhat deeper to the northeast. Sand thickness is between 25 and 30 feet. Toward the edges of the formation there is the usual tightening of the sand.

BROKEN FORMATION PRESENT

Above the Bartlesville is a stray broken formation which has caused considerable trouble in the course of flooding. This broken formation is made up mostly of shale and also some coal and sand. Although packers were supposed to be set on top of the sand and producing wells have been cased below this 2 or 3 feet of broken stray formation, nevertheless, water has traveled through this stray formation and shown up in producing wells. In some cases water has been known to travel as much as 1,200 to 1,300 feet in this way. A well drilled on the Mary Hall lease found water in the stray, although this formation was known to be dry before flooding began. In this case, the water in the stray under the lease was traced to two wells on the Cina Hall tract, that were input wells with packers that were supposed to be in the Bartlesville.

The sand being flooded is known as the Upper Bartlesville. Twelve feet of black shale separate it from the Lower Bartlesville sand which is much more permeable than the upper sand. Since there

World's Largest Marketers of

PETROLEUM COKE

INQUIRIES AND OFFERS INVITED

GREAT LAKES FUEL CORP.

500 Fifth Avenue, New York, N. Y.

Distributors for

GREAT LAKES COAL and COKE CO.

910 South Michigan Ave., Chicago, Illinois

Hutchins ALL STEEL Reversible
Self Locking Winches
for heavy oil field work

90% of the truck winches on the Pacific Coast are Hutchins Winches

Write for literature and prices

HUTCHINS WINCH CO.
631 East Florence Blvd.
Los Angeles TW2375 California

has been nothing to be gained in flooding the lower sand, this has been plugged in those wells which penetrated sands. It appears that the upper and lower sands run together at some point off the property in the vicinity and the shale brake lenses out. However, there is no reason to believe that the flood in the upper sand has effected the lower.

The upper sand is regarded as a good sand for flooding; there are few laminations. The most favorable zones are to the west and the northwest. To the southeast the sand is broken.

When the Carter Oil Co. acquired this property 10 years ago, the wells were found to be cased either to 160 feet or 225 feet with 6¼-inch casing. After flooding commenced a practice was followed of casing to the top of the Bartlesville. Only two producing wells were cemented on top of the Bartlesville.

METHOD OF INPUT

In regard to input wells two different policies were followed. While Burt Collins was directing flooding operations tubing was cemented at the top of the Bartlesville, where he set a wall type packer, with 15 to 20 feet of cement above and mud to the top of the hole. This practice was discontinued in the first part of 1935 because it seemed advisable to provide means for cleaning out when desired. At that time there was considerable trouble with the sand being clogged as the result of using bad water. By the time the water problem was cleaned up all the wells had been drilled. And input wells which were drilled as part of that year's program were cased to the sand. But since then, after it has been found that water suitable for flooding can be furnished by using water from a proper source and that insurance against trouble can be had by the right treatment, the practice of casing to the sand is regarded in a different light. It is now believed that there should be no need to clean out input wells and therefore, the expense of tubing on input wells could be saved.

In the development of this project it was found that it was sometimes advantageous to test input wells by using tubing and packer to see how the formation would take the water. Such a test would sometimes show that the well should be shot again.

As a rule, input wells were shot with 1 quart to the foot. Producers were shot with 2 to 2½ quarts to the foot. Shooting practice was governed by cores or tests. In shooting it was aimed to keep 5 or 6 feet away from the casing point. Sand tamping was tried but found to be of no advantage on these leases. A water load of 300 feet was carried.

PRESENT WATER INPUT

At the present time the water input amounts to about 2,500 bbls. a day pumped to the wells with a line pressure of 400 pounds. The highest pressure used has been 420 pounds. In the beginning the sand started taking water at 150 pounds; this was soon built up to 300 pounds to get volume of input. As the production curve shows, the effect of increases and decreases in water input shows its effect on oil production, usually within a 30-day period.

Water to input wells is metered; oil production is gauged in test tanks and water production is recorded by pumper's gauges. Records of water production do not go further back than 1934 and these have been kept for two groups of leases, one of these being the Cinca Hall and Mary Hall; the other being for the Nellie Hall. A curve of water production from the first group shows that it lags considerably behind the changes indicated by the water-input and the oil-production curves. From about 2,000 bbls. a month in May, 1934, it has gradually mounted up to 21,000 bbls. a month in the first part of 1936 where it has leveled off for the rest of the year. Salt water production from the Nellie Hall lease mounted from 1,400 bbls. in February, 1936, to 3,000 bbls. in June; since then the curve has leveled off. These water production figures indicate that the formation is getting pretty well loaded.

Water used at the beginning of the flooding operation came from shallow wells at a depth of from 50 to 60 feet. This water carried iron oxide

(Continued on Page 48)

If Pressure Drops » » » »

Flow will STOP *altogether*

A HEALTHY pressure or none, must be the aim in some uses of gas. It may be that a well needs to be protected from depletion, or that gas needs to be kept at higher pressure in one part of a line or system than in other parts. Set the *Fulton Back-Pressure or Check-Pressure Regulator* for any desired minimum, and gas will flow only while pressure on the inlet side remains above that minimum. When pressure drops it will no longer hold the valve open against the weights imposed; and therefore flow ceases.

C-F regulators have been known as the best for over fifty years. Correspondence is invited concerning any requirement of pressure control for gas, oil, steam, water, etc.

CF

Back-Pressure or Check-Pressure Regulator

THE CHAPLIN-FULTON MANUFACTURING CO.

28-40 Penn Ave. Pittsburgh, Pa.

REPRESENTATIVES:

WESTCOTT & GREIS, INC. *Sales and Service* Dallas—Tulsa

HIMELBLAU, BYFIELD & CO. 36 S. Throop St., Chicago, Ill.

Or any Jobber

GARLOCK 7021

COMPRESSED ASBESTOS GASKET SHEET

for

HIGH TEMPERATURES

EXTREME PRESSURES

GASOLINE OIL GAS STEAM

Gaskets cut from GARLOCK 7021 Compressed Asbestos Sheet give exceptional service on pipe lines and other equipment handling gasoline, oil, gas or steam at high temperatures and extreme pressures. Tough, yet resilient—GARLOCK 7021 is particularly economical and efficient for severe conditions.

THE GARLOCK PACKING COMPANY, Palmyra, N. Y.

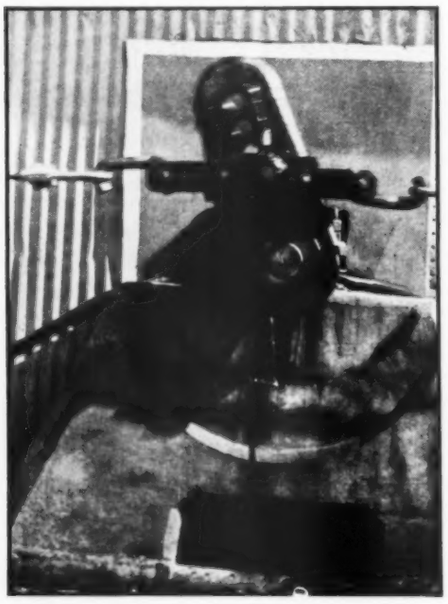
Tulsa, Okla. Houston, Texas Los Angeles, Calif.

RENEW your subscription NOW!

Conversion to Central Powers Reduces Operating Expense

By MITCHELL TUCKER

The conversion of individually operated beam wells to various designs of multiple pumping arrangements during the last few years have permitted substantial economies to be made in the Haynesville field of northern Louisiana. The utilization of beam pumping equipment, which was made available by this conversion, in the construction of four-well bandwheel pumping powers has proved the most reliable and economical method tried in the field. At the present time thirty of these home-made four-well powers have been placed in operation, and their many economies in both construction and maintenance are well established.



Showing manner in which wells are attached in each direction to wrist-pin bearing connection

Production in this field is from the Buckrange sand occurring at about 2,850 feet, and fluid volumes average about 40 to 50 bbls. per well per day. Normal pumping cycles on these multiple units average about 23 24-inch strokes per minute. The majority of wells are 24-hour pumpers. A spacing pattern of one well to 10 acres has been followed throughout the field. Topographical conditions are favorable to rod-line pumping. A greater portion of the field is now being repressured.

After flush volume loads declined sufficiently to make multiple pumping practical, a great deal of light weight beam pumping was made available by the gradual changeover. The manner in which the field forces of Ohio Oil Co. have utilized this equipment in the construction of these multiple pumping units offers an excellent example of the economies which may be expected under similar circumstances. Conditions did not demand the construction of large heavy-duty geared bandwheel powers, and neither did individual pumping rigs possess sufficient strength to permit installation of the conventional back-side-crank pumping devices. As a medium ground, the "stub rig," four-wheel bandwheel powers have been found most practical.

These units are centrally located between four wells, either in line or approachable through the use of swings. Small engines and clutches formerly used on beam wells are employed, housed in 15x12-foot steel buildings. A steel constructed belt hall, 28x3½ feet, extends to the wooden bandwheel (formerly employed on standard rig) which is mounted on concrete posts and submerged in a concrete pit to permit running rod-lines as near the ground as desired. Bandwheel and cranks on each side are pre-shrunk and keyed to the shaft, which rests in self-lubricated bearings mounted upon the concrete posts. Two-way solid connections to wrist-pin bearings give proper directional force to the rod-lines. The position of the wristpin in the crank determines length of stroke. From each of the cranks two wells are pumped, one in each direction from each crank. If swings are necessary, the same balance is effected.

Many safety features have been included in the construction of these multiple pumping units. Knock-off blocks consist of 6-inch pipe cemented into the earth, to which are bolted 12x8-inch oak timbers. Rod-line movement is conveyed through these blocks by 3-inch pipe slide bars, strengthened by 2-inch pipe welded inside. Friction occasioned by the movement of slide bars through the oak timbers is minimized by heavy lubricants. Holes are burned through the slide-bar sections about 10 inches apart, into which an iron pin with a safety extension holder is inserted to effect the knock-off.

The small amount of personal care required on the part of lease men in maintenance of such continuously operated units presents one of their important economies. A unique precautionary measure is employed to shut down the engine in case of belt trouble or "run-aways," thereby preventing engine wrecks or demolished belts. The bandwheel belt operates through a small steel "window" frame which is struck if the belt becomes seriously out of alignment. The striking of the frame immediately springs a trap which in turn jerks spark-plug connections, shutting down the engine.

The outstanding operating features of this four-well unit is the complete balance or equalization of loads in each direction. Cranks are keyed to the bandwheel shaft at 90-degree angles, as experience and engineering studies have shown that at this position the most uniform load, with minimum torque variation, is obtained when loads in each direction are approximately equal. Proper balancing of multiple pumping layouts has always been the paramount question in their design.

Theoretically, the only power that should be necessary for a properly balanced unit is that necessary for lifting the fluid and overcoming friction and inertia of the moving parts in the transmission system. This condition is closely approached in the Haynesville units, and the light engines operate very smoothly, and under no apparent load. On certain units recently inspected, such a complete balance was prevailing that the wrist pin connections could be slid on the pin at almost any point in the cycle.

Bandwheel end of four-well powers, showing cranks operating rod lines in two directions

Other advantages of these small home-made four-well pumping units have been enumerated as follows:

1. Low initial cost, when considering that the units were built by regular field and shop forces, from equipment that had very little salvage value under prevailing conditions.

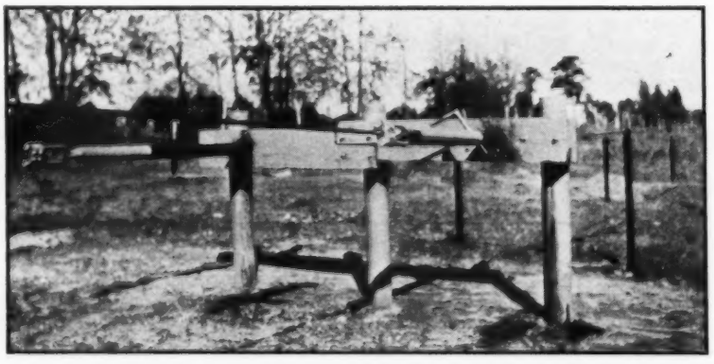
2. Engine and clutch trouble ordinarily comprise a major portion of power maintenance costs. Such expense on these four-well units have been found to be very small.

3. The surplus weight of counterbalances always decreases the operating efficiency of multiple pumping assemblies. Such four-well units require no counterbalancing.

4. Down-time on unit reduced to minimum, and even when it occurs, only four wells affected.

5. Short rod lines, with minimum number of swings, hold-downs, and daily care presents worthwhile savings.

6. Long and heavy rod lines present hazard of breaking, with damaging effect upon the central power, and wells connected to it.

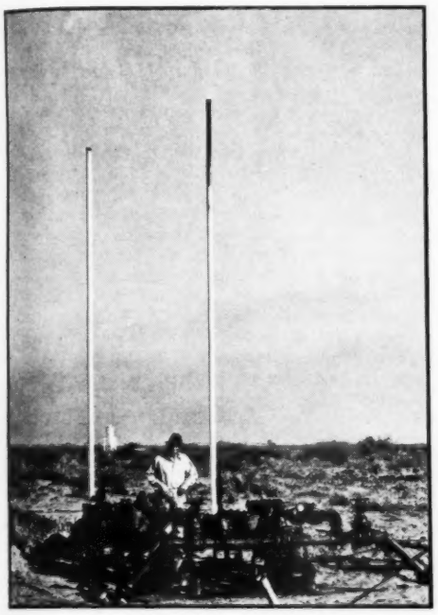


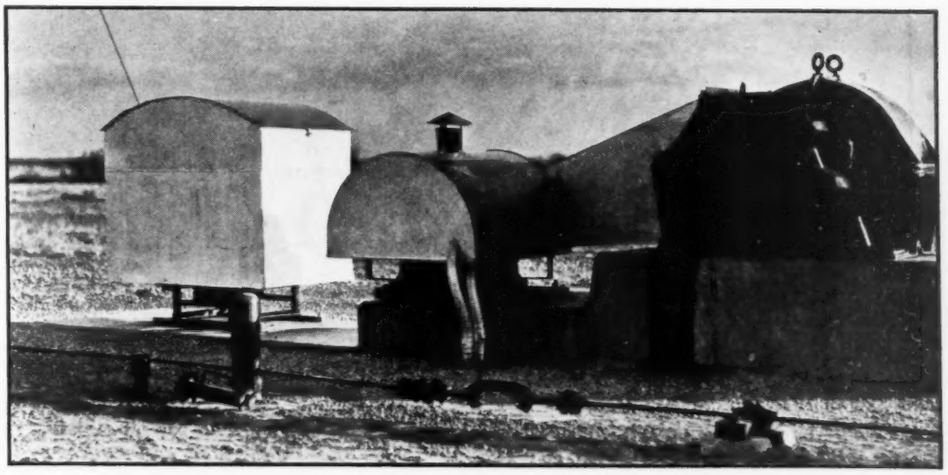
Type of knock-off posts employed in the four-well powers

OPERATING IDEAS

Pumps Operated by Gas

In West Texas one oil company is utilizing residue gas at a pressure of about 200 pounds to pump water for its lease operations. The pump is operated at 100 strokes per minute. As the gas is sour it is being burned after being exhausted from the vents.



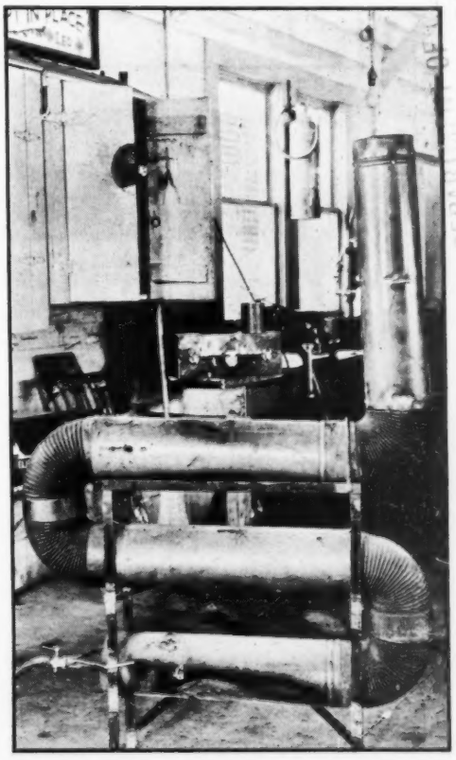


Housing Electric Powers With Removable Hoods

By installing removable metal hoods on the transformer and pumping equipment, one operator in the Forsan pool of Big Spring, Tex., has eliminated the need of constructing a building to house a 6-well electric power. Also there was no need of erecting a pole upon which to mount the transformer since the hood prevents anything from contacting the transformer. Another advantage of this type installation is that the motor receives better circulation of air and operates at lower temperature than if it were housed in a building. The installation presents a very neat appearance and has proved very satisfactory for rural operation.

Novel Gas Stove

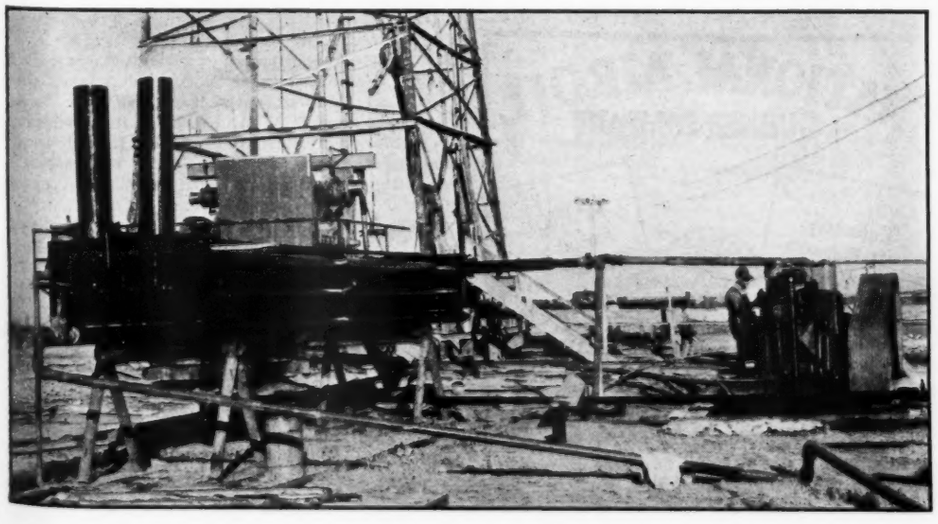
Many different types of home-made gas stoves are in use in oil-field shops and tool houses, some being made from oil drums, paint drums, surface casing and discarded engine cylinders, but the stove shown in the accompanying photograph is probably the most unusual in use. The sole materials used in this stove are four joints of stovepipe and bends with four fire bricks placed



in the bottom section, the stove being fired by only a gas jet for a burner. The surprising fact is that it has been found to heat the large garage in which it is placed with less fuel than the drum-type stove it replaced.

Condenser for Conservation of Drilling Water

The scarcity of water for drilling operations in some sections of West Texas and the Panhandle presents a large problem to the drilling operator so that many precautions, not taken elsewhere, are used to conserve the available supplies. Near Odessa, Tex., one company drilled to a depth of 1,000 feet to obtain a supply for the rotary rig shown here. Therefore to save as much water as possible, a condenser was installed. By returning all exhaust steam to the condenser and gravitating the hot water back to the boilers, they were able to effect a great savings in water and boiler fuel. The condenser is 20 feet long and consists of eight lengths of 4-inch pipe. Thus the steam must travel 160 feet before it reaches the vertical exhaust outlets and by this time a large portion has been condensed to water.



DEPARTMENT OF GEOLOGY UNIVERSITY OF NEBRASKA

Patents

PROTECTING SCHLUMBERGER METHODS

Number	Date of Issue
1,819,923	August 19, 1931
1,826,961	September 13, 1931
1,894,328	January 17, 1933
1,913,293	June 6, 1933
1,970,342	August 14, 1934
1,980,100	November 6, 1934
2,018,080	October 22, 1935
2,020,856	November 12, 1935
2,050,128	August 4, 1936

Numerous new applications are pending at the present time in the United States Patent Office. All of the Schlumberger processes are broadly covered in foreign countries as well.

U. S. Patents listed herewith cover the technique now in use by Schlumberger Well Surveying Corporation, as evidenced particularly by the following claims:

"Patent 1,819,923—Claim 1.

"An electrical process for determining the nature of the geological formations traversed by drill holes and which consists in measuring the electrical specific resistivity of the formations encountered at different depths inside the drill hole, where said hole contains water."

"Patent 1,913,293—Claim 1.

"An electrical process for the geological investigation of the porous strata traversed by a drill hole, consisting in filling the hole with water or mud, and measuring in this fluid at various depths, in the uncased part of the hole the differences of potential which spontaneously take place at the contact between the porous strata and said fluid."

SCHLUMBERGER
WELL SURVEYING CORPORATION
HOUSTON, TEXAS U.S.A.
"Electrical Well Logging"

BRANCH OFFICES:

Long Beach, California Oklahoma City, Okla. Shreveport, Louisiana
Hutchinson, Kansas Corpus Christi, Texas

HAVE YOU A CALIFORNIA SELLING PROBLEM?

Sales Manager for production equipment manufacturer in California desires to make change, and is open to negotiation with manufacturer of major production equipment who desires or needs additional California representation.

This man understands the aggressive marketing of oil field production equipment, and has both practical and technical knowledge of production practice. Has wide acquaintance with, and enjoys confidence of production personnel of California operators.

Ready now to secure real results for some manufacturer of meritorious equipment whose policies embrace modern enlightened selling methods conducted under high ethical standards.

Address Box H-550
The Oil and Gas Journal

NATIONAL AIROIL
BURNER COMPANY
ESTABLISHED 1912 INCORPORATED 1917

Manufacturers
Installation
Engineers
Sales - Service

Industrial Oil Burners Gas Burners and Furnace Equipment

NAIROIL Automatic Oil Burners for HOMES APARTMENT HOUSES CHURCHES, STORES FACTORY BUILDINGS OFFICE BUILDINGS

Offices and Salesrooms
1325-27 Girard Avenue

Factory
L St. & Sedgley Avenue

Philadelphia, Pa.

Results of Five Years' Flooding in Nowata Field by Carter

(Continued from Page 45)

which it was desirable to eliminate. To this, brine from producing wells was added. A filter was installed in 1932 but the water was merely freed of suspended matter but not of the corrosiveness which was giving trouble. Red water was prevalent. Since iron oxide quickly clogs sand filters which can be seen aboveground, it was clear that damage was being done to the finer grained formations below ground. Back flowing of the wells similar to the back flowing of a filter was in order. The use of brine from producing wells was discontinued. For a while an experiment was tried of precipitating the iron oxide by aeration in a pond. Lime was added for stability. This reduced the iron oxide to a negiligible quantity. However, the most satisfactory solution of the water problem was found to be a discontinuance of the use of well water and the use of water from the Verdigris River which was not aggressive. A dry lime feeder was installed in April, 1935; alum has been added by means of a pressure pot installed shortly afterward, but this is to be replaced by a dry feeder. The treating of the water is controlled by the use of the calcium carbonate saturation test, sometimes known as the "shaking test."

What control there has been exerted on the flooding operation has been effected by pinching in the water input wells. The pumping schedule has been straight time or modifications required from week to week to meet changing conditions of the movement of water in the formation.

In the course of flooding these leases, it is reported that some evidence was found of the oxidizing effect of repressuring with air. This came in experience with two wells. One of these had been an air-input well during the 1927-1930 period when the property had been repressured. This well was changed over to be a producer after flooding commenced. For the first six months it produced nothing but b.s.; gradually the amount increased and the output looked more and more like carbon black. After a year it cleared up overnight and started producing between 5 and 6 bbls. a day. The other case mentioned was where an input well for flooding was drilled adjacent to the site of an old air input well. In the core there was no oil; instead there was a black, sticky carbon.

The conclusion to be reached after a consideration of some of these features, which happen to be most conspicuous after five years of operation of this pioneer experiment in flooding in the Mid-Continent, is that such an operation must be conducted systematically with close attention given to coring and the study of strata problems, pattern and spacing, and the supply and treatment of water.

Form Michigan Geological Society

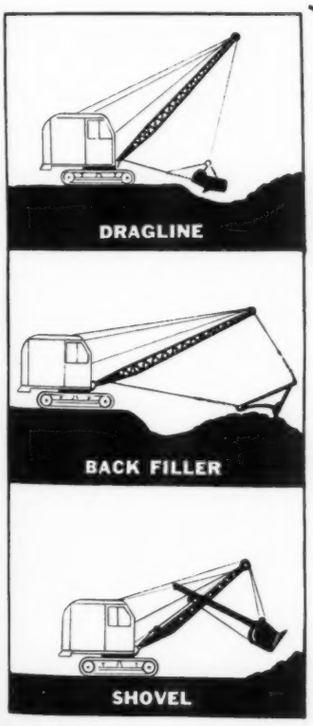
Dr. R. B. Newcombe, vice president of Associated Petroleum Co. at Mount Pleasant, Mich., who was formerly petroleum geologist for the Michigan State Geological Survey, was elected temporary chairman of the Central Michigan Geological Society at its first meeting. Mr. Newcombe appointed Raymond S. Hunt, president of the Cryden Petroleum Co., as temporary secretary. He also appointed a committee on organization consisting of W. A. Thomas, geologist for McClanahan Oil Co.; Karl Schilling, division geologist for Shell Petroleum Corp.; W. A. Clark of the Michigan Well Elevation Service; Lynn K. Lee, division geologist for Pure Oil Co.; George D. Lindberg, consulting geologist, and Kurt de Cousser, division geologist for Socony-Vacuum Oil Co.

Those appointed on the program committee were Ben F. Hake, division geologist for Gulf Refining Co.; Dr. Virgil R. D. Kirkham, consulting geologist; Dr. R. A. Smith, state geologist; Harold F. Moses, division geologist for Carter Oil Co.; Paul Buttermore, geologist for Chartiers Oil Co., and William F. Brown, consulting geologist.

At the first meeting, attended by 68 geologists, Mr. Hake spoke on "Exploring the Field of Geologic Argument" to provoke discussion of Michigan stratigraphy. Fred P. Struhsaker, head of the lands division of the Michigan State Conservation Department, spoke of "Aspects of the Krench Case." There was much general discussion.

FROM START TO FINISH

YOU WORK FASTER AND IT COSTS YOU LESS WITH A P&H BANTAM WEIGHT



Here's the little machine that's on its toes every minute—cutting costs on all kinds of work around the oil fields and pipe line jobs. It's fully convertible—truck or crawler mounting—for service as crane, clamshell, dragline, backfiller, pile driver, trench hoe or shovel. And its attachments of alloy steels are so light you can make the change-over right on the job.

Think what that means to you in terms of low-cost service for digging slush pits and basements, handling pipe, erecting structural steels, backfilling, driving piles, etc. On truck mounting, the Bantam Weight travels safely at 40 miles an hour . . . gives you the ability to handle widely separated jobs with mighty little lost time between them.

The Bantam Weight's all-welded of alloy steel to make it *lighter, stronger, faster!* And the peppy Ford V-8 motor gives it plenty of power with the lowest operating cost you ever found in a unit of this kind. Somewhere near you there's one at work. Why not have a look at it? Shall we tell you where?

FOR WELDING IN THE FIELD "SMOOTHARC" P & H HANSEN TRAILER WELDER

Powered by a small, air-cooled gas engine, the new Model 150 gives you the right capacity for all kinds of field service, plus the ability to get around fast. For pipe line welding, machinery repairs or fabrication of structural steels, here's arc welding in its simplest form with a single dial adjustment to regulate current over the entire welding range. The patented internal stabilizer winding assures a steady arc for uniform, high-speed welding results. A post card will bring your copy of Bulletin W-6 which describes it.

HARNISCHFEGER CORPORATION

4527 WEST NATIONAL AVENUE — *Established 1884* — MILWAUKEE, WIS.

Warehouses and Service Stations: Hoboken — Memphis — Jacksonville — Dallas — Seattle — Los Angeles — San Francisco

P&H BANTAM WEIGHT — FIRST TO THE JOB AND FIRST THRU

Drilling in Illinois Basin Found Difficult for Improvised Rig

By T. P. SANDERS

A home-made steel drilling rig of unusual design, after three and one-half years of work on the part of its owners, has spudded to a depth of 4,932 feet in the sediments of the Illinois basin. Two strings of tools are now stuck in the bottom of the hole side by side, but the operators are far from ready to give up, since not long ago they had four strings lost and have since recovered two of them. The story of the drilling of this hole offers a good example of the difficulties sometimes encountered in drilling a cable-tool hole, and also shows a good present-day example of the determination and faith which led to many of the large discoveries in the early days of the oil industry.

The six Leach brothers undertook the drilling of this test, the No. 1 Joseph C. Ellen, located 2 miles west of Albion, Ill., with no previous experience except for 40 years of operating dredge boats. In building their rig they used the boom from a discarded dredge boat to serve for a derrick. This was braced with an angle-iron structure when deeper drilling resulted in a heavy load on the boom. The rig is powered with a 60-horsepower diesel engine which was salvaged from the dredge on which the boom was used. The only conventional equipment on the rig are the spudding wheel and the pitmans. Even the derrick floor is of steel, and the structure is supported by heavy wheels which make it semiportable. There is no walking beam, so spudding has been used for the entire depth. Drilling was started on June 2, 1933. Wooden conductors, 22 inches in diameter, were set through 24 feet of surface soil. The next casing used was 16-inch steel casing set at 32 feet.

HOLE REDUCED TO 4 INCHES

Choosing this size casing has since proved to be a mistake, because it has been necessary to reduce the size of the hole until it is now only 4 inches in diameter, whereas if larger steel casing had been used inside of the wooden conductor there would not be the danger now present of losing the hole because of having to run more casing, thereby reducing the size of the hole to an extent that would make it practically impossible to drill any deeper. At 620 feet it was necessary to run 11½-inch casing because of fresh-water sands, and 300 feet deeper the 10-inch had to be run because of more water. The 8-inch casing was run at 1,220 feet, but it was underreamed and lowered to 1,620 feet. The 6⅝-inch was run at 2,559 feet and lowered to 3,190 feet after underreaming. The 5 3/16-inch casing was run to 3,294 feet in the top of the Mississippi limestone, and the hole is open below this depth. Some sulfur water is coming in which has made drilling slow below 4,300 feet. Wells in this section are often drilled with the hole partly full of water, which saves running casing but greatly slows up the drilling.

Many serious fishing jobs have been encountered so far on this hole. The first of these occurred when the drill stem broke in two squarely in the middle. After three weeks of fishing it was removed with a combination socket. Next, the bit became stuck in the top of the Mississippi lime at 3,370 feet, and the line broke in attempting to remove it. Eighteen weeks were spent in fishing for this string of tools and in drilling by them after it had been found impossible to recover them. At a depth of 4,780 feet another string of tools was lost in the hole. This took place in January, 1936. The resulting fishing job was long and difficult, and the tools were recovered only after the Leach brothers, failing to find a hollow spudder on the market more than 6 feet long, made one 68 feet long which they used in removing the cavings from around the tools, making it possible to recover.

By August the hole had been drilled to its present depth of 4,932 feet, and here another string of tools was lost. After fishing had proved unsuccessful, a whipstock was set on top of the lost tools and a new hole was drilled down beside them. The bit, however, on the second string had been pounded out to gauge so that a lip projected at the

The reworked boom, taken from a discarded dredge boat, being used as a drilling rig

bottom of the grooves which run down the side of the bit. This lip caught under the bottom of the bit which had been left in the hole, and in trying to get it free the drilling line was broken, leaving the second string of tools with some of the drilling line in the new hole beside the first string of tools. A third string was sent down which engaged the drilling line on the second string, but the rope socket on top of the third string unscrewed. A fourth string was then run with a combination socket, which caught the third string, and jarring was commenced. It was believed that all four strings were being moved, but the strain on the equipment was so great that the cable, winding tightly on the hoisting drum, broke the end plate off of the drum, and caused a shutdown for surface repairs. During this shutdown the cavings settling around the tools in the hole made it impossible to move them again without cleaning out part of the cavings with the hollow spudder, and this necessitated cutting the line above the fourth string. After a long fishing job the two top strings of tools were recovered, but the two remaining strings constitute a very difficult problem and for that reason work has been discontinued for several weeks while the next move is considered. Possibly new tools are being made, since the Leach brothers have been quite successful in making and using tools of their own patterns. A combination socket, a rope-knife, a rasp and a hollow spudder are among their accomplishments.

The Mississippi limestone, which is an important horizon marker is Illinois, was struck at 3,305 feet, according to geologic information, but hard lime was not encountered until a depth of 3,365 feet was reached. Sulfur water was found at 4,230 feet. The hole is still in the Mississippi lime, and it is reported to be extremely hard at this depth. Probably it was intended that the hole should test some of the formations below the Mississippi lime, but it now seems very doubtful that the test will ever reach any deeper sands which have been notably productive in other regions, because not enough reduction of hole has been allowed for, and the test is located in a deep part of the basin where a depth of about 6,500 feet would have to be drilled to test formations such as the Trenton and St. Peter.

MAY MOVE TO NEW LOCATION

If it is found necessary to abandon No. 1 Ellen, it is probable that the Leach brothers will start another well in the same locality with the same rig. Their belief that there are large oil reservoirs in the sandstones and limestones of this section of the basin are held by many other individuals, but no one else has so actively supported this belief. Since practically all of the drilling, fishing and other operations have been done by the Leach brothers themselves, the cost of labor has been small. Equipment costs have run quite high because six drilling lines have had to be purchased and many tools were left in the hole. The determination which has characterized the Leach brothers' drilling of this hole reminds one of the seven Merritt brothers who discovered and developed the world's largest iron-ore deposits after they had spent 20 years in prospecting, during which they never ceased to believe that the ore was in that region of northern Minnesota. The Leach brothers will not abandon their test until all hope is gone. The hole is straight, as evidenced by the fact that no excessive wear in any spots on the drilling line has been noticed. Thus one common cause of trouble has been avoided.

Since this unusual test is a wildcat located at a considerable distance from other holes, it has contributed valuable data on stratigraphy in the Illinois basin, where drilling has just been started after a gigantic leasing boom. Data are obtained by the State Geological Survey from all wells such as this one which are drilled in Illinois. It has long been the policy of that body to make extensive, careful studies of such data, and to make the results of these studies available to the public. In this way the Illinois State Geological Survey plays a far more active part in the development of oil reservoirs in their state than do the state surveys of other oil-producing states.

Thermal Polymerization has proven a commercial success

Four additional thermal polymerization units are now nearing completion by a company which has been operating one unit for a considerable time.

This is the most convincing evidence of the commercial success of this method of producing high octane number gasoline.

Thermal polymerization converts both saturated and unsaturated gaseous hydrocarbons to premium grade motor fuel. It permits the refiner to utilize by-product gases from cracking units and the natural gas operator to convert waste gases into high octane blending fuel.

Refiners and natural gas operators are invited to investigate the facilities of this organization and its agent, The M. W. Kellogg Company, for the analysis and solution of problems in the gas polymerization field.

THERMAL POLYMERIZATION

THE POLYMERIZATION PROCESS CORPORATION

15 EXCHANGE PLACE • JERSEY CITY, N. J.

THE FOLLOWING DIESEL ENGINE MANUFACTURERS HAVE TESTED OR EXAMINED THE QUALITY OILS MANUFACTURED BY GULF FOR DIESEL ENGINE LUBRICATION AND HAVE PRONOUNCED THEM SATISFACTORY FOR THE LUBRICATION OF THE ENGINES THEY BUILD.

GULF

Allis-Chalmers Manufacturing Co.
ANDERSON ENGINE & FOUNDRY COMPANY
ATLAS IMPERIAL DIESEL ENGINE CO.
Benz Diesel
Bethlehem Steel Company
BOLINDERS
BUSCH-SULZER BROS. DIESEL ENGINE CO.
CATERPILLAR TRACTOR CO.
CHICAGO PNEUMATIC TOOL COMPANY
CLARK BROS. CO.
Cole-Diesel
CONTINENTAL GIN COMPANY
COOPER-BESSEMER CORPORATION
CUMMINS ENGINE COMPANY
DE LA VERGNE ENGINE COMPANY
ELECTRIC BOAT COMPANY
F. A. D. Manufacturing Co.
Fairbanks, Morse & Co.
Foos
FULTON IRON WORKS CO.
HERCULES MOTORS CORPORATION
HILL DIESEL ENGINE COMPANY
Ingersoll-Rand Company
JOSEPH REID GAS ENGINE COMPANY
Junkers Corp. of America
Kahlenberg
Kromhaut Diesel Engine Co.
McINTOSH & SEYMOUR CORPORATION
Mianus
Muncie Oil Engine Company
NATIONAL-SUPERIOR-COMPANY
NORDBERG,
R. A. Lister & Co. Ltd.
STANDARD MOTOR CONSTRUCTION CO.
STERLING ENGINE COMPANY
STOVER MANUFACTURING & ENGINE CO.
SUN SHIPBUILDING & DRY DOCK CO.
Superior Gas Engine Co.
THE BUCKEYE MACHINE CO.
THE BUDA COMPANY
The Hooven, Owens, Rentschler Co.
THE MICRO CORPORATION
THE OTTO ENGINE WORKS
The Power Manufacturing Co.
The St. Mary's Oil Engine Co.
THE UNION DIESEL ENGINE COMPANY
Tips Engine Works
VENN-SEVERIN MACHINE CO.
Washington Iron Works
Weber Engine Company
WESTINGHOUSE
WINTON ENGINE CORPORATION
WITTE ENGINE WORKS
Wolverine Motor Works, Inc.
WORTHINGTON PUMP AND MACHINERY CORPORATION

GULF DIESEL ENGINE LUBRICATING OILS

GULF OIL CORPORATION • GULF REFINING COMPANY

General Offices: GULF BUILDING · PITTSBURGH, PA.

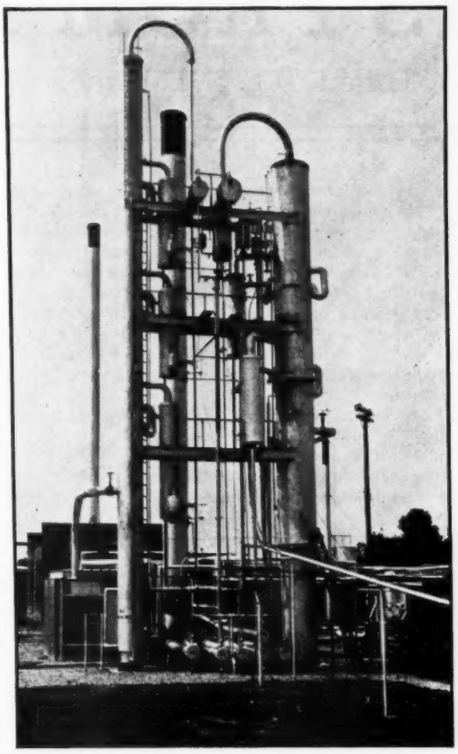
New Ohio Refinery to Process Crude Stored for 10 Years

A refinery for special petroleum products being constructed near Findlay, Ohio, will operate on Mid-Continent crude oil, most of which has been in storage near Findlay for more than 10 years. An outlet will thus be furnished for over 3,000,000 bbls. of crude for which demand is otherwise lacking, because a considerable portion of the gasoline fractions have evaporated during the years of storage. However, the H. A. Montgomery Co., of Detroit, which is erecting the refinery, has tested possible sources of crude oil supply in many sections of the country and has determined that the oil in storage near Findlay is practically ideal for its purposes.

Since it is a manufacturer primarily of lubricants, and makes no gasoline, the evaporation of light fractions represents a concentration of the fractions of greatest value to it. The crude is especially free from water and sediment; probably because of the many years during which suspended matter has had opportunity to settle out. The quality is further shown by the fact that the top stream off of the crude at the fractionator is "doctor sweet." The daily charge of the refinery will be 500 bbls. At this rate there is enough oil available in Hancock County storage to supply it for 15 years.

Millions of barrels of crude oil have been accumulated in Hancock County, by the Ohio Oil Co., during periods of overproduction between 1920 and 1930, and the demand since has not been great enough to move it from storage while pipe line oil is available.

The oil charged to the refinery will first go through two continuous-process tube stills. Four top streams will then be extracted in an atmospheric fractionating tower. The bottoms from this fractionator will be charged to a two-stage vacuum unit from which a series of neutral oils will be extracted overhead. The light fractions from the fractionator will undergo a "doctor" and stabilization treatment from which they will be run to separate storage. The oils will be treated and neutralized by a contact-filtration method before entering the Benzol-Acetone system where wax will be removed from the lubricating stock. The Montgomery company is operating on the Benzol-Acetone system under license from the Texas Co.



Tower for fractionating special products

The unique feature of this arrangement is that the wax will be extracted after treatment and not before treatment, a factor which should act to improve the color of the wax. A natural lubricating oil of low pourpoint will be produced from the remaining lubricating stock, without the use of pourpoint depressants. Shipment will be by tankcar and truck. The products will be specialcut naphthas, distillate fuel oil, and lubricants.

May Open Shreveport Laboratory

SHREVEPORT, La., Nov. 30.—Shreveport was virtually assured a U. S. Bureau of Mines petroleum laboratory this week when it was disclosed that the Department of the Interior at Washington had agreed to construct and equip a $500,000 laboratory on the grounds of Centenary College if $30,000 could be raised locally to inaugurate the work and operate it in temporary quarters from January 1 to July 1, 1937.

The laboratory is assured if oil men in this territory raise $10,000; if the state of Louisiana will supply $10,000; and if $10,000 can be raised from the citizens in general. Oil companies with headquarters in Shreveport have already subscribed their share and no difficulty is anticipated in securing the necessary portion from the state.

North Louisiana Tests

SHREVEPORT, La., Nov. 30.—Northern Louisiana operators are answering the plea for fewer offsets and more exploratory tests, for this week 10 new deep wildcat tests were begun on geologized or geophysically explored blocks in the territory.

A STANDARD RIG ON WHEELS

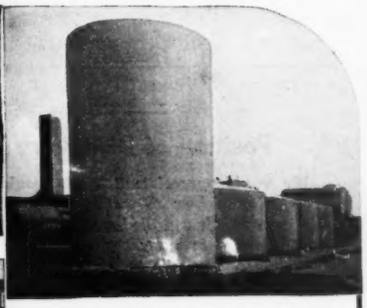
★ Star No. 49C, the largest capacity spudder on the market, easily handles a 5½" x 36' stem with heavy bits, providing standard rig performance with portable machine economy. Star Spudders are built in various sizes. Write for full details. The Star Drilling Machine Co., Akron, Ohio. Branches: Chanute, Kansas; Wichita Falls, Texas; Portland, Oregon.

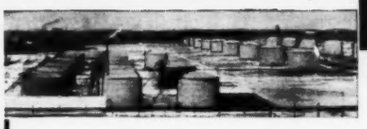
MANY NEW FEATURES

Large Diameter Air-Cooled Brakes . . . New Triple Clearance Clutch . . . Chain-Driven Reels . . . Oversize Shafting . . . Traveling Spudder Sheave . . . and many others.

STAR DRILLING MACHINES

GENERAL STEEL PLATE CONSTRUCTION ★ GRAVER TANKS WATER CONDITIONING EQUIPMENT





All standard size Tanks for quick delivery or built to your specifications.

● Tried and proved methods and the latest findings of modern engineering skill make Graver Equipment preferred by oil producers, refiners, service station owners and all types of industry.

● For real utility, ease of maintenance and long life, use Graver Tanks and supplemental equipment.

Send for literature giving engineering data.

For Manufacturing Transporting and Storing Oils Gases Chemicals Liquids Solids

GRAVER TANK & MFG. CO., INC.

75 Years of Dependable Service

New York, N.Y. East Chicago, Ind. Chicago, Ill. Catasauqua, Pa.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Method for Calculating Constant for Kinematic Viscosity Formula

I am unable to determine how a constant used in determining kinematic viscosity referred to in an article by William G. Heltzel on "Fluid Flow and Friction in Pipe Lines," published in the Oil and Gas Journal of June 21, 1934, has been secured. This constant is 929 used in the formula kinematic viscosity in foot-pound-seconds U/S=929 U/S poises. I am trying to arrive at a similar figure for inch-pound-seconds used in calculating bearings.—E. W. H. R.

The factor you refer to is obtained in the following manner:

$$\text{Absolute viscosity} = \frac{\text{(grams)}}{\text{(sec.) (cm.)}} = \frac{\text{(pounds)}}{\text{(sec.) (ft.)}}$$

One pound = 453.60 grams.

One foot = 30.48 cm.

$$\frac{453.60}{\text{(sec.) (30.48)}} = \frac{\text{(pounds)}}{\text{(sec.) (ft.)}}$$

$$\text{Kinematic viscosity} = \frac{\text{absolute viscosity}}{\text{density}}$$

One cubic cm. of water = one gram.

One cubic foot of water = 62.428 pounds.

Therefore:

$$\frac{453.60}{\text{sec. (30.48)}} \div \frac{1}{62.428} = \frac{929.047}{\text{sec.}}$$

Position of Discovery Well

We would appreciate it if you would inform us as to the distance from the original test well that the oil field extends when drilled up in the ordinary field. Is it not true that in many cases the oil does not extend more than half a mile in a certain direction, while in others it might go as far as 2 or more miles?—D. S. M.

There are no ordinary conditions applying to the size or shape of an oil field. The discovery well may be located in the center of the pool, at the edge or any other spot in it.

Under modern development programs it is common practice to use geophysics to determine the size and shape of the structure. After the field work has been done and the structure mapped good practice requires that the first well be located in a position assumed to be midway between the edge of the pool and its apex. If this well is successful in striking oil it is now good practice to carefully core the producing formation and secure bottom-hole samples of the gas and oil, bottom-hole pressures and all other data possible and by making careful study of these data in the laboratory to try to determine formation characteristics and then correlate known conditions in the formation with geophysical information.

As well spacing in any field is one of the essential details to be carefully studied it is then possible to make location for the subsequent wells to be drilled following the information developed by the above outline practice and in order that as much of the field be developed with as few wells as possible it should follow that the second well be located on the opposite side of the structure from the discovery well so as to determine the approximate position of the apex of the structure. If this second will is also a producer the third well should be located at a position along the strike of the apex of the structure on the other axis to try to determine the exact shape and size of the producing formations. The fourth well would be located opposite to the third well on the other side of the structure's apex and if these four wells all drilled into the producing formation the subsequent wells could then be located in two lines. The long line of locations should parallel the long axis of the structure while the short line of wells should run at right angles to the apex of the formations.

Following these general development plans it should be possible to drill a minimum number of wells to fully explore the field and if other wells are needed to protect offset interests they could be placed in such positions as to give maximum recovery with minimum of total wells. This manner of development contemplates the usual anticlinal type structure with gas at the top, oil down dip and edgewater further down dip below the oil. With the wells in the pattern of a cross it would then be possible to proceed to produce the oil from the middle section of the reservoir, return the gas to the wells located at the top of the structure and control water movement up dip to maintain reservoir pressures and permit the oil to be recovered by flowing practically all of it using natural energy alone.

Will Hot Gas Aid in Repressuring Operations?

In repressuring oil sands with gas is it practicable to heat the gas prior to its going into the well and is there any evidence that this procedure will increase oil production?—J. W. H.

It is very probable hot gas passed through the formation containing oil would be beneficial but the mechanical problem is to find some way to introduce heated gas into a sand 1,300 feet below the surface. Where hot gas has been used in an attempt to overcome paraffin troubles it has been observed that the heat was not effective much below 700 feet in the tubing.

It is reported that in the Panhandle field, Texas, in a gas lift installation in an attempt to overcome paraffin troubles hot gas was used. In flowing through the tubing it was possible to flow a well about five days and then it plugged up almost solid and the production gradually decreased. The hot gas going down kept the tubing clean through the upper 700 feet and by the time it reached the 700-foot level most of the heat had been utilized and from that point down to the liquid level the paraffin accumulated and caused trouble.

From this statement it seems reasonable to assume that it will be very difficult to introduce hot gas into an oil sand 1,300 feet below the surface.

There is another way to attack this problem. An electric heater can be installed at the bottom of the input well. This unit can be thermostatically controlled to maintain any desired temperature at the face of the sand. Gas could then be forced down the input well and would be heated as it passed through the bottom of the hole and around the heater. How much heat could be transferred to the gas in this manner is unknown.

From the experience gained in trying to heat paraffin it would seem that it is very doubtful as to the benefit to be gained if the heated oil tends to congeal as the heat is dissipated and it might result in the formation, at some distance from the input well, becoming plugged with procipitates following the heating and cooling of the oil. As it is practically impossible to heat the formation for any appreciable distance around the well into which the heater has been lowered it would seem probable that trying to drive this heated oil away from the heated zone would result in plugging the sand pores. If the bottom of the well is heated the usual practice is to permit the oil to escape into the bottom of the well containing the heater. In this way the oil becomes gradually warmer and flow can be maintained.

Our advice would be against trying to force hot gas through an oil bearing formation unless it is possible to heat the entire stratum and maintain this heat over a long period of time.

One Method of Determining Bottom-Hole Pressure Decline

How is the bottom-hole pressure decline method applied to wells in the Yates pool, Pecos County, Texas? —M. E. S.

The top of the lime elevation in this field varies from 1,100 to 1,500 feet and the intermediate elevation of 1,300 feet above sea level has been chosen as the datum line.

Depth pressure recording instruments are used to determine reservoir pressure.

Each well is shut in 24 hours preceding the depth-pressure measurement to stabilize the reservoir pressure in the vicinity of the well.

When fluid level is above the assumed 1,300-foot datum line the measured pressure is corrected by subtracting the static pressure of the column of oil above datum. Conversely, when the fluid level is below datum, the measured pressure is added to the static pressure of the fluid between the bomb and the fluid level and the static pressure of the column of compressed gas between the fluid-level surface and the datum plane.

As it is almost impossible to measure directly the depth to the surface of the fluid in a shut-in well, the Yates Engineering Committee developed the following formula for computing the bottom-hole pressure by which the position of the fluid level may be calculated:

$$P = P_{wh} + (D - x)\ 0.3625 + Cx.$$

Where: P = pressure at the point of observation, lbs. per sq. in.;
P_{wh} = casinghead pressure, shut in, lbs. per sq. in.
D = depth of test, feet
x = depth from surface to fluid level, feet;
C = gas factor (lbs. per sq. in. per ft. of gas column at well head pressure P_{wh}).

Example:

P = 600 lbs. P_{wh} = 494 lbs. D = 1,214 feet
C = 0.13 elevation 2,281 feet above sea level.

Solution:

$600 = 494 + (1214 - x)\ 0.3625 + 0.13x$ solving for x.

x = 956 ft., or the fluid level was
1214 − 956 = 258 ft. above the point of test
2281 − 956 = 1325 ft. above sea level.

Hence:

the estimated pressure of 1,300 ft. above sea level was $P_{1300} = 600 - (25 \times 0.3625 = 591$ lbs. per sq. in.

In practice it was found this method of determining changes in bottom-hole pressure worked out very satisfactorily and during the five-year period, January 1, 1931, to January 1, 1936, it has been used by the Yates field engineering committee.

The value of progressive pressure surveys has served as a guide for estimating the flowing life of the field, indicating possible areas of premature water encroachment and estimating recovery values

IN 1935, 2,743,908 new passenger cars were sold in this country—high compression cars with an average compression ratio of 5.99—1.

For 1936, it is estimated*, new passenger car sales will exceed 3,200,000 —high compression cars again, with an average compression ratio of 6.16—1.

In 1937 the new passenger car sales are expected to equal, if not exceed, this year's sales—and the 1937 cars have an even *higher* average compression ratio.

**From Automotive Daily News, October 25, 1936*

These high compression, high performance cars should have Ethyl to develop their full performance. That's an *indication* of the way the cat is jumping to the Ethyl side of the gasoline fence. And now here's *proof:*

By the end of 1936, total gasoline sales will have increased approximately 10% over 1935, *while Ethyl sales will have increased 20%!* That's double!

With the better feeling and freer spending that comes from better economic conditions, and with more new cars on the road that should have Ethyl, there's every reason to expect an even greater increase in Ethyl sales next year.

There's no doubt of it—the "sales cat" is jumping toward the Ethyl pump! Jump with him, and push *your* Ethyl sales!

NOW'S THE TIME ETHYL TO SELL ETHYL!

ETHYL GASOLINE CORPORATION

NAPHTHAS **FUEL OILS**

DIESEL OIL **KEROSENE**

GASOLINE **INDUSTRIAL**

AUTOMOBILE LUBRICANTS

BRIGHT STOCKS

Nine strategically located Shell Refineries — Arkansas City, Kan. Coalinga, Cal. • Dominguez, Cal. • East Chicago, Ind. • Houston, Texas Martinez, Cal. • Norco, La. • Wilmington, Cal. • Wood River, Ill.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Use of Liquefied Butane For Fuel When Drilling Wells

I desire information dealing with the arrangement and conditions for using liquefied butane as a fuel for drilling wells.—B. S.

The advantages of liquid butane for fuel purposes include its weight, 4.85 pounds per gallon, and the low boiling point of 32.9° F., which permits it to be released under normal conditions, to immediately change to the gas form. Each gallon of liquid produces about 32 cubic feet of gas.

The conditions for handling butane in large quantities are discussed by L. G. E. Bignell, when describing the use of this fuel for the drilling of a well. The liquefied fuel is stored in a covered 8,000-gallon tank near the well location. The liquid is transported from the gasoline plant by truck, on which are mounted two 42 by 92-inch tanks. These two tanks are connected across the top with a smaller third tank, to serve as an expansion dome. These tanks are tested to 150 pounds hydrostatic pressure and have a total capacity of 1,080 gallons. A pump, driven by the truck engine, unloads the liquid to the storage tank.

A top connection on the storage tank delivers gas to the two 300-horsepower six-cylinder internal combustion engines and a bottom connection delivers liquid butane to a pipe line leading to the reducing pressure unit. The delivered gas, at the engines is at 100° to 120° F. and 1 to 1½ ounces pressure.

The regulators, heaters, manifold system, etc., are set up under the derrick floor. The liquid passes through the first reducing regulator, where the pressure is lowered from 35 pounds to about 10 pounds, and the second reduces this to a few ounces. The low pressure gas is expanded into a small tank from which it is withdrawn for use in the engines.

Reference: L. G. E. Bignell, Butane Gas Normally Waste Product Successfully Used as Engine Fuel, The Oil and Gas Journal, July 11, 1935, page 31.

Outline of Copper Chloride Method for Sweetening Gasoline

Please describe briefly the method used for sweetening gasoline by what is called the copper chloride method.—B. M. F.

Copper in various forms has been proposed and used for the treatment of petroleum distillates since the early days of the industry. The first use was in the Frash method for purifying the light oils derived from the Lima crude oil, which involved distillation of the oil in the presence of copper oxide. Oils of this type were afterwards readily sweetened by a combination of treatment with sulfuric acid and the sodium plumbite solutions. The advantage of using a copper sweetening process is that the chance for over-sulfuring, as by the plumbite method, is eliminated. A review of the several methods for sweetening by means of copper salts was included in the several articles on Chemical Process in Refining of Petroleum Distillates by Morrell and Egloff. They mention the early British Patent (1887) of Kennedy who desulfurized by treating the hot oil with solutions of sodium chloride, cupric sulfate and sodium hydroxide. Numerous other inventors have made use of other copper salts. The comparatively recent U. S. Patent No. 1,515,733 (1924) relates to the use of clays containing adsorbed salts of copper, which is the contact material over which the vapors pass for the reduction of sulfur. Copper hypochlorite solution is proposed by Morrell and Camay. Cupric ammonium hydroxide is the material described in the Hounsel patent. The apparatus suitable for cupric chloride or other copper solutions is discussed by Morrell and Bergman. Removal of finely divided suspended copper compounds formed during the process is effected by treating with small quantities of fullers earth.

Schulze and Buell, of the Phillips Petroleum Co., suggested that certain solutions are extremely active, the cuprous mercaptides being almost instantaneously converted to disulfides. The reactions are:

(1) $4\,RSH + 2\,CuCl_2 \rightarrow RSSR + 2\,RSCu + 4\,HCl$
Mercaptan; Cupric chloride; Disulfide; Cuprous mercaptide; Hydrochloric acid

(2) $2\,RSCu + 2\,CuCl_2 \rightarrow RSSR + 4\,CuCl$
Cuprous mercaptide; Cupric chloride; Disulfide; Cuprous chloride

Combining the two stages, the equation becomes:

(3) $4\,RSH + 4\,CuCl_2 \rightarrow 2\,RSSR + 4\,CuCl + 4\,HCl$
Mercaptan; Cupric chloride; Disulfide; Cuprous chloride; Hydrochloric acid

Cuprous chloride, although practically insoluble in water, is quite soluble in solutions containing a high concentration of chloride salts. The hydrochloric acid is retained also by solution. These two factors are highly essential since in the next step the cuprous chloride and the hydrochloric acid are reconverted to cupric chloride by oxidation with air. The equation for this reaction is:

(4) $4\,CuCl + 4\,HCl + O_2 \rightarrow 4\,CuCl_2 + 2\,H_2O$
Cuprous chloride; Hydrochloric acid; Oxygen; Cupric chloride; Water

Addition of equations (3) and (4) gives the simple expression

(5) $4\,RSH + O_2 \rightarrow 2\,RSSR + 2\,H_2O$
Mercaptan; Oxygen; Disulfide; Water

from which it is seen that no chemicals, other than oxygen which in practice is obtained from compressed air, are used up in the process.

In the commercial application the solutions are prepared from copper sulfate and sodium chloride. The regeneration of the solution proceeds rapidly. Additional information on the subject may be obtained from the references.

References: Morrell and Egloff, The Oil and Gas Journal, March 19, 1936, page 105; March 26, 1936, page 57; April 2, 1936, page 29; April 9, 1936, page 36. Schulze and Buell, October 17, 1935, page 40.

SPECIFICATIONS

GRAPHITE LUBRICATING GREASE

Three grades, soft, medium and hard, which shall be a smooth and homogenous mixture of mineral oil, flake graphite and pure lime soap. The grease shall contain no fillers.

Test—	Grade		
Grease:	Soft	Med'm.	Hard
Puretration	300–355	240–290	190–230
Mineral oil % min.	85	80	75
Water % max.	1.5	2.0	2.0
Graphite %	2–3	2–3	2–3
Free lime (Cao) % max.	0.10	0.10	0.10
Corrosion	nil	nil	nil
Mineral Oil:			
Vis. at 130° F., S. U. sec., max.	125	125	125
Flash °F. min.	340	340	340
Fire °F. min.	370	370	370

Shall possess only slight odor of mineral oil and may be rejected if any other odor present. The flake graphite shall be free from grit and contain minimum of 82 per cent graphite.

U. S. Government Specifications for Petroleum Products

I believe that either the United States government or the United States Navy has developed a set of specifications covering petroleum products of all descriptions. Can you tell me if there is such a publication and if so can you tell me where to get it?—D. F.

The formerly well-known Technical Paper 323-B of the U. S. Bureau of Mines, entitled United States Government Master Specification for Lubricants and Liquid Fuels, has been discontinued. That publication, revised from time to time, was convenient for reference purposes, because the specifications for the several products were set forth, together with methods for sampling and testing, under one cover.

The U. S. government now publishes the specifications covering petroleum products in what is known as the Federal Standard Stock Catalog, section 4, part 5. Each specification is obtainable in pamphlet form at the rate of 5 cents each through the Superintendent of Documents, Washington, D. C.

Quality of Rodessa Gas Varies With Operating Conditions

Can you please tell me what is the specific gravity of the natural gas produced in the Rodessa field in Louisiana-Texas?—I. D.

The temperature and pressure variations existing at the wells throughout the Rodessa field influence the composition, and therefore the specific gravity, of the gas. Low pressure and high temperature make for the highest yield and gravity. The gravity does not vary much under similar conditions at the gas wells or at the oil-gas wells.

The composition of the gas from the Rodessa discovery well, flowing 500 bbls. per hour with 15 to 20 pounds separator pressure and high temperature, is given in the table:

RODESSA DISCOVERY WELL GAS

	Per cent
Carbon dioxide	0.90
Methane	72.14
Ethane	10.97
Propane	6.32
Butane	4.74
Pentane	1.78
Heavier	1.38
Nitrogen	1.77
Gasoline (26-70)	1.732 GPM
Specific gravity	0.8352
B.t.u./cu. ft.	1387

The analysis of the gas from a typical well in the gas and gas-distillate area, southern edge, is shown in the next table:

GAS FROM RODESSA GAS-DISTILLATE AREA

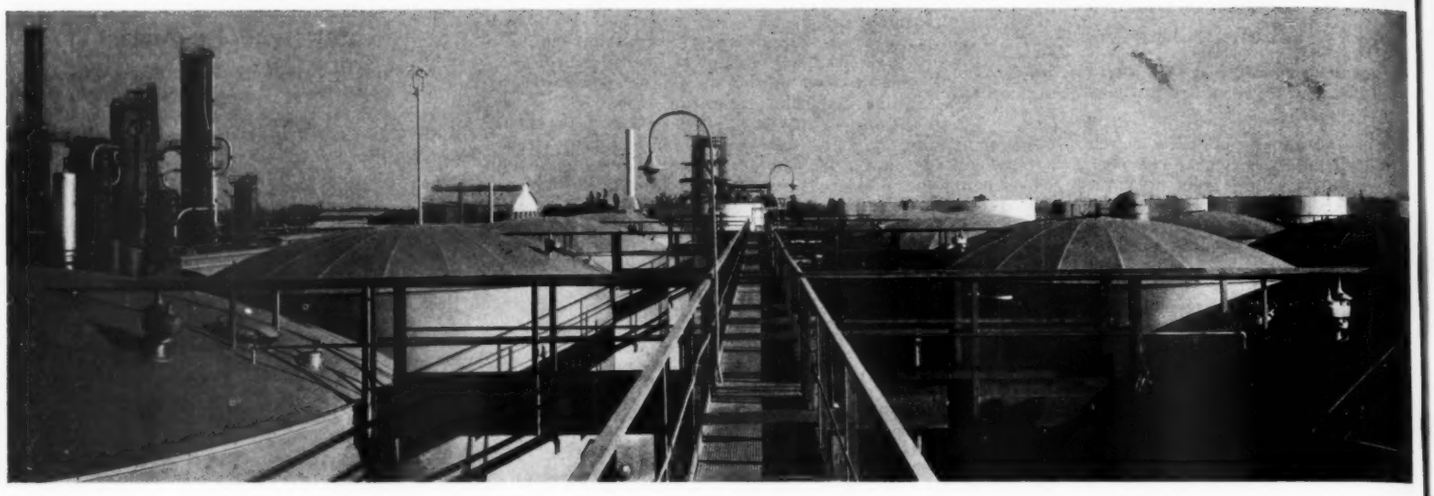
	Per cent
Carbon dioxide	0.50
Methane	84.69
Ethane	3.84
Propane	1.54
Butane	1.11
Pentane	.51
Heavier	.57
Nitrogen	7.24
Gasoline (26-70)	0.606 GPM
Specific gravity	0.667
B.t.u./cu. ft.	1052

The specific gravity from another property, 200 pounds separator pressure and high gas-oil ratio, is 0.6577. This gas yields 0.352 GPM of gasoline.

Specifications for Refinery Chemicals

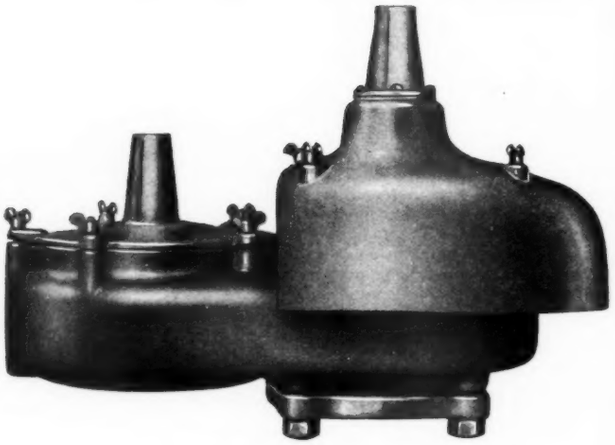
Starting about the first of the year, a series of specifications covering the quality of chemicals used in the refining of petroleum will be published on this page.—Editor.

Wilshire Refinery uses S & J Breather Valves



Conspicuous in the panorama of tank roofs at the new Wilshire Refinery at Los Angeles are the S. & J. Breather Valves,—symbolic of the high quality equipment that went into the building of this modern refinery.

Climb up on the tank tops at most any major refinery and note the S. & J. Breathers, Flame Arresters, Gauge Hatches, Automatic Gauges, Manholes and miscellaneous tank fittings. Your inquiries for high quality fittings for ordinary and high pressure storage are solicited and given prompt attention.



This is the S. & J. "All-Weather" Poppet type breather valve, designed especially to meet venting conditions on refinery tanks located in areas subject to extreme weather conditions. These breathers are of our "full flow" design, with body of cast iron and pallets of aluminum unless otherwise specified. It has separate outlets for pressure and vacuum and can be supplied with a flame snuffer if desired. Available in 3", 4", 6", 8", and 10" sizes.

S&J

SHAND & JURS CO.

BERKELEY, CALIFORNIA

295 Madison Avenue, New York

225 W. 11th Street, Los Angeles

601 Fannin Street, Houston

SHAND & JURS

FIELD OPERATIONS

Summarizing the Week's Developments

The Moore pool in Cleveland County, Oklahoma, was extended one-fourth mile southeast by a gusher. Another well on the Moore community block was estimated good for from 18,000 to 25,000 bbls. daily. A pool opener in northern Lincoln County was being completed as a gasser. Five new wells were completed in the Olympic district of southwestern Okfuskee County. A wildcat in McIntosh County was dry and abandoned.

KANSAS

The eighth well was completed in the Weathered pool, Cowley County, and it was the largest Kansas completion of the week. A well near Sedan, Chautauqua County, flowed 65 bbls. an hour for three hours and was hailed as the biggest well in southeastern Kansas. A Rooks County pool opener was completed. Rice County set the pace for the state with seven new oil wells.

TEXAS

The much discussed Cochran County, West Texas, discovery well was not a large producer upon completion, but it may be on the edge of the structure and is expected to be followed by other tests for which better results are anticipated. The new pool opener in Gaines County was a relatively small well after two acid treatments. The Means field in Andrews County, and the Goldsmith field in Ector County, were extended a half mile each. Cooke County is to have a 6,000-foot test, which will be of great interest to North Texas operators. The Talco pool in northeastern Texas had 13 oil wells added to its total with no failures. Among 45 new oil wells in East Texas was one which produced 60 per cent water, the largest water percentage thus far recorded in a new well in that field. In Southwest Texas, Nueces County appears to have a new pool 12 miles southeast of Corpus Christi. Nueces County's wild well bridged which shut off the burning flow of oil. In the Gulf Coast area production was opened on a flank of the old Orange pool in Orange County.

NORTH LOUISIANA-TEXAS

While the outpost tests in the Rodessa area are still in the uncompleted list they continue to be closely watched, one of them in section 4-23-16, 2 miles north of production on the Louisiana side of the field has been flowing by heads and promises to be a commercial producer. Rodessa production climbs slowly but steadily, but the wells cannot, on an average, make their allowable because of the gas-oil ratio restrictions applied to the field.

ROCKY MOUNTAIN FIELDS

An important discovery was made in northern Moffat County, Colorado, where a wildcat well good for 1,000 to 1,500 bbls. and 4,000,000 feet of gas was brought in. Production comes from the lower Wasatch sand in the Tertiary. A well in the Archuleta field of southern Colorado was good for 1,920 bbls. a day, the largest well in the pool. An 872-bbl. well in the Rock River field, Wyoming, and a 4½-mile extension of the Cut Bank field in Montana were other important Rocky Mountain features. Shell Petroleum Corp. completed the largest New Mexico well of the week in section 6-21-36e, in the Eunic field. It flowed 2,280 bbls. of oil naturally through tubing in 24 hours. A Roosevelt County wildcat caused some excitement when it had a rainbow show of oil and some gas at 2,125-29 feet, and was rigging up standard tools.

MICHIGAN

A showing in a test near Howard City in Montcalm County, Michigan, gives promise of a new pool, bringing the western and central Michigan fields closer to each other. The oil tests 47 gravity, highest yet found in the state.

Completions in All Fields

(Week Ending November 28, 1936)

	Oil	Gas	Dry	Total	1936 total comp. to date	1935 total comp. to date
Penna. Grade Fields	15	21	5	41	3,128	2,799
Lima Field	0	0	0	0	80	89
Central Ohio	2	16	10	28	392	290
Indiana	0	0	0	0	162	179
Illinois	0	0	1	1	27	11
Michigan	5	1	3	9	600	546
Kentucky	7	1	4	12	264	231
Kansas	25	3	16	44	1,520	1,125
Oklahoma	27	2	12	41	2,240	1,853
North Central Texas	32	0	24	56	2,274	2,416
West Texas	41	0	3	44	1,438	754
Texas Panhandle	6	4	2	12	592	653
East Central Texas	13	1	2	16	355	234
East Texas	45	0	0	45	2,277	3,914
East Texas border	10	0	0	10	124	8
Gulf Coast Texas	21	3	2	26	1,086	974
Southwest Texas	42	0	11	53	2,703	1,429
Total Texas	210	8	44	262	10,849	10,382
North Louisiana	3	3	0	6	572	300
Gulf Coast Louisiana	5	0	1	6	334	326
Total Louisiana	8	3	1	12	906	626
Arkansas	0	0	1	1	79	110
Montana	4	1	1	6	219	176
Wyoming	2	0	0	2	96	82
Colorado	2	0	0	2	26	18
New Mexico	3	0	0	3	532	308
Utah	0	0	0	0	5	5
California	18	0	7	25	1,132	1,023
Total United States	328	56	105	489	22,257	19,853
Total previous week	325	57	129	511		
Difference	3	1	24	22		

Outstanding Fields—Highlights

(Week Ending November 28, 1936)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Anahuac	4	5	2	1,128	132	7,250
Hastings	3	9	3	1,493	112	6,432
Loma Novia	3	7	7	1,220	617	14,780
Seven Sisters	2	5	2	800	326	7,580
Saxet Heights	3	7	3	270	198	8,100
Saxet	5	36	6	830	287	18,400
Lopez	1	7	3	650	236	4,760
East Texas	56	90	45	1,722	21,765	449,150
Talco	13	35	13	1,352	120	9,050
OKLAHOMA						
Oklahoma City	2	13	0	0	1,080	143,475
Fitts	10	66	3	1,587	529	63,875
Burbank-So. Burbank	2	10	0	0	2,154	23,125
KANSAS						
Ellis County	3	13	3	2,806	65	3,387
Reno County	6	20	2	2,098	346	15,611
Russell County	7	53	4	4,917	514	22,814
Rice County	7	49	7	7,060	629	36,990
NEW MEXICO						
Lea County	11	95	3	3,530	503	73,660
LOUISIANA-TEXAS						
Rodessa, La.	5	19	2	811	324	56,709
Rodessa, Tex.	6	56	10	5,874	108	21,760
Gillis, La.	2	6	0	0	54	17,837
Tepetate, La.	2	2	1	213	37	5,738
MICHIGAN						
Porter-Yost	4	8	0	0	416	15,600
Crystal-Montcalm	5	12	0	0	145	3,820

Kansas Developments

By
DAL DALRYMPLE

BIG WELL IN SEDAN SECTOR; RICE WILDCAT HAS SHOWING

Several large wells were completed in various Kansas pools the past week, a Rooks County wildcat was completed as a pool opener, and a well that rates as one of the biggest producers ever drilled in southeastern areas centered attention of oil men on the Sedan area of Chautauqua County.

Largest well of the week was completed in the Weathered pool of Cowley County. Rice County set the pace for the state, however, with seven new oil wells having total initial production of 7,060 bbls. daily. The biggest of these was a 2,245-bbl. well in the Schartz area east of the Silica field. The largest of four wells completed in Russell County had initial production of 2,411 bbls. daily, and new wells in Ellis and Reno counties also made potentials in excess of 2,000 bbls. daily each. A total of 44 wells were completed in Kansas, including 25 oil wells, 3 gas wells and 16 dry holes.

Prospects for extending the Hauschild pool of Rice County about 1½ miles west appeared good at Beardmore and others No. 1 Johnson, NW NW NE section 17-21-7w. The Conglomerate was found high structurally at 3,358½ feet, and showed some saturation. The well was bottomed at 3,360 feet, and casing was being set in top of the Conglomerate. The wildcat is due west of the Hauschild pool and 1 mile south and one-half mile east of the new Saxman pool.

Estimated Daily Production

Estimated daily average production of Kansas for the week ending November 28, and for the preceding week, was as follows:

	Barrels	
	Nov. 28	Nov. 21
Oxford City	3,025	2,975
Burrton	13,500	13,225
Ritz-Canton	5,900	5,875
Hollow-Nikkel	3,700	3,725
Voshell	2,825	2,800
Ellsworth:		
Lorraine-South Lorraine	6,402	6,310
Other pools	1,470	1,358
Rice-Barton counties:		
Bloomer	2,360	2,295
Chase	9,210	8,995
Geneseo	1,370	2,270
Raymond	3,270	3,050
Silica	12,825	13,705
Keesling	2,350	2,180
Hauschild	2,735	2,630
Miscellaneous Rice	5,230	5,258
Miscellaneous Barton	2,735	3,261
Russell County:		
Fairport	1,815	2,300
Gorham-East Gorham	6,940	5,095
Russell	2,605	3,530
Sullivan	3,320	2,925
Trapp	2,820	2,465
Other pools	5,314	5,608
Sedgwick County:		
Valley Center	1,275	1,305
Greenwich	1,178	1,150
Robbins	1,200	1,120
Eastborough	725	745
Other pools	360	468
Ellis County	3,387	3,525
Kingman County	630	548
Stafford County	2,056	2,302
Greenwood County	10,150	10,250
Butler County	17,850	17,910
Other fields	24,868	26,142
Total Kansas	165,400	167,300

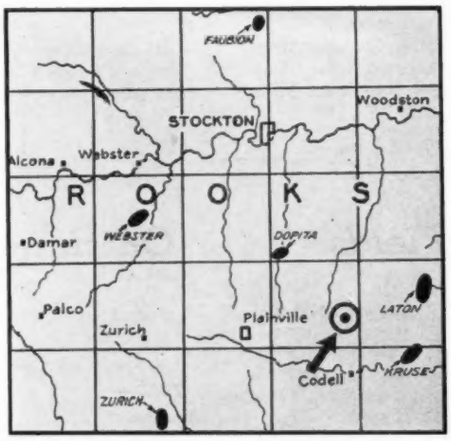
Rice County

Seven new oil wells with initial production of 7,060 bbls. daily were completed in Rice County, and one location in the Hauschild district was abandoned. All of the completions were in the Silica-Schartz-Raymond sector.

J. H. Tatlock No. 12 Berscheit, NW SE NW section 6-20-10w, topped Siliceous lime and set 7-inch casing at 3,268 feet; total depth, 3,274 feet, and made potential of 1,765 bbls. of oil. Stanolind Oil & Gas Co. No. 7 Specht, SE SW NE section 6-20-10w, was acidized with 2,000 gallons and made potential of 1,751 bbls. Top of Siliceous lime was 3,287 feet; total depth, 3,317 feet. J. H. Tatlock No. 13 Berscheit, NE SE NW section 6-20-10w, made potential of 1,411 bbls. after acid treatment with 1,000 gallons. Siliceous lime was topped at 3,290 feet, where 7-inch casing was set; total depth, 3,298 feet. Stanolind Oil & Gas Co. No. 6 Specht, SW NW NE section 6-20-10w, was acidized with 1,000 gallons and reacidized with 2,000 gallons, making potential of 1,228 bbls. of oil. Production was from Siliceous lime, topped at 3,299 feet; total depth, 3,329 feet.

Mid-Continent Petroleum Corp. No. 2 Woods, NW NE NE section 4-20-10w, set 7-inch casing at 3,316 feet, where Siliceous was topped, and was bottomed at 3,331 feet. It swabbed 305 bbls. of oil in six hours. It was later treated with 1,500 gallons of acid and made potential of 1,746 bbls., down two hours of the 24-hour test.

The Texas Co. and others No. 2 Schartz, SE cor. section 33-19-10w, made potential of 2,245 bbls.



A new pool was opened in Rooks County, Kansas, at L. C. Drilling Co. and others No. 1 Wasthusin, C NE SE section 11-9-17w, as indicated by the arrow.—(E. C. Jacobson, maps, Tulsa)

of oil, down five hours of the 24-hour test, after acidizing with 2,000 gallons. It previously flowed 490 bbls. in 24 hours. Top of Siliceous lime was 3,311 feet; total depth, 3,326 feet.

Sinclair Prairie Oil Co. No. 4 Specht, NE SE SE section 20-20-10w, topped Siliceous lime at 3,290 feet; total depth, 3,294 feet. After plugging back 1 foot, it was acidized and made potential of 110 bbls. of oil, with 375 bbls. of water.

Garden & Haines No. 1 Whinery, SE NW NE section 10-21-7w, Hauschild district, was an abandoned location.

New Work Started

First reports of new work in Rice County follow: Shell Petroleum Corp. and others No. 1 Reese "A," SW SW NW section 5-19-9w, rigging up rotary; Phillips Petroleum Co. and Indian Territory Illuminating Oil Co. No. 13 Krampe, SE cor. section 31-19-10w, cellar; Permian Oil Co. No. 1 Monroe, C NE NE section 9-20-7w, old well being deepened, underreaming 8-inch casing at 2,840 feet; Stanolind Oil & Gas Co. No. 9 Specht, NW SW NE section 6-20-10w, building rotary rig; J. H. Tatlock No. 4 J. Berscheit, NW SW SW section 6-20-10w, building rotary rig; Magnolia Petroleum Co. No. 3 Bayer, NW SW NW section 7-20-10w, rotary rig; Rose Spring Drilling Co. and others No. 1 Mantel, SW SE NE section 18-20-10w, rigging up rotary; El Dorado Refining Co. and R. W. Sage No. 1 Gossman, SW SE SW section 5-21-7w, moving in material; T. M. Deal Oil & Gas Co. No. 1 Hauschild, SW SW SE section 11-21-7w, rotary rig.

Shell Petroleum Corp. and others No. 3 Hafermann, NE NE SE section 6-19-9w, total depth 3,238 feet, made potential of 620 bbls. of oil but had not been completed. Torry & Feaster and others No. 1 Wallace, SW SW NE section 32-19-9w, topped Siliceous lime at 3,214 feet, had pay at 3,224-32 feet, total depth, and oil rose 2,700 feet in the hole. It was acidized but not tested. Mid-Continent Petroleum Corp. No. 8 Risse, NE cor. section 6-20-10w, topped Siliceous lime at 3,290 feet and had a hole full of oil at 3,305 feet, total depth. Douglass Oil & Gas Co. and others No. 1 Hughes, SE cor. section 6-21-7w, second well in the Saxman pool, topped Conglomerate at 3,331½ feet, flowed an estimated 50 bbls. of oil an hour at 3,333 feet and was drilling ahead at 3,335 feet.

Russell County

Largest of four new oil wells completed in Russell County was Shell Petroleum Corp. No. 4 Michaelis, NE SW NE section 31-15-13w. After treatment with 3,000 gallons of acid, it made potential of 2,411 bbls. of oil. Top of Topeka lime was 2,729 feet; Oswald, 3,029 feet; Siliceous lime, the producing horizon, 3,265 feet; total depth, 3,273 feet. W. I. Southern, Inc. No. 1 Sellens heirs "A," SE SE SW section 30-15-13w, topped Oswald lime at 3,012 feet; Siliceous lime, 3,262 feet, and was bottomed at 3,266 feet. It was acidized with 4,000 gallons and made potential of 1,152 bbls. in 24 hours, down six and one-half hours.

Alva Billings No. 1-A Herbel, SE SE SW section 26-14-14w, was acidized with 5,000 gallons and made potential of 610 bbls. of oil. Production was from Oswald lime at 2,923-3,025 feet, total depth. Anhydrite was topped at 740 feet.

Empire Oil & Refining Co. No. 9 Crawford, SE NW SW section 2-14-15w, topped anhydrite at 899 feet; Kansas City, 3,063 feet; Gorham sand, 3,304-15 feet, total depth. It made potential of 744 bbls. of oil.

Joe Aylward and others No. 1 McAllister, NE NE SE section 9-12-13w, wildcat, failed to find Siliceous lime, topped Mississippi at 3,525 feet; had a hole full of water at 3,567-68 feet, total depth, and was dry and abandoned. Top of anhydrite was 811 feet; Topeka, 2,705 feet; Kansas City, 3,009 feet.

Hartman & Blair No. 1 J. Boxberger, NE cor. section 26-14-14w, an old well, was deepened, had an increase in oil at 3,012-15 feet, and was recompleted at 3,017 feet, total depth. It pumped 359 bbls. in 24 hours. Hartman & Blair and others No. 1-A Gurney "B," SE cor. section 23-14-14w, an old well, was deepened to 3,020 feet, total depth, pumped 339 bbls. of oil in 24 hours and was recompleted.

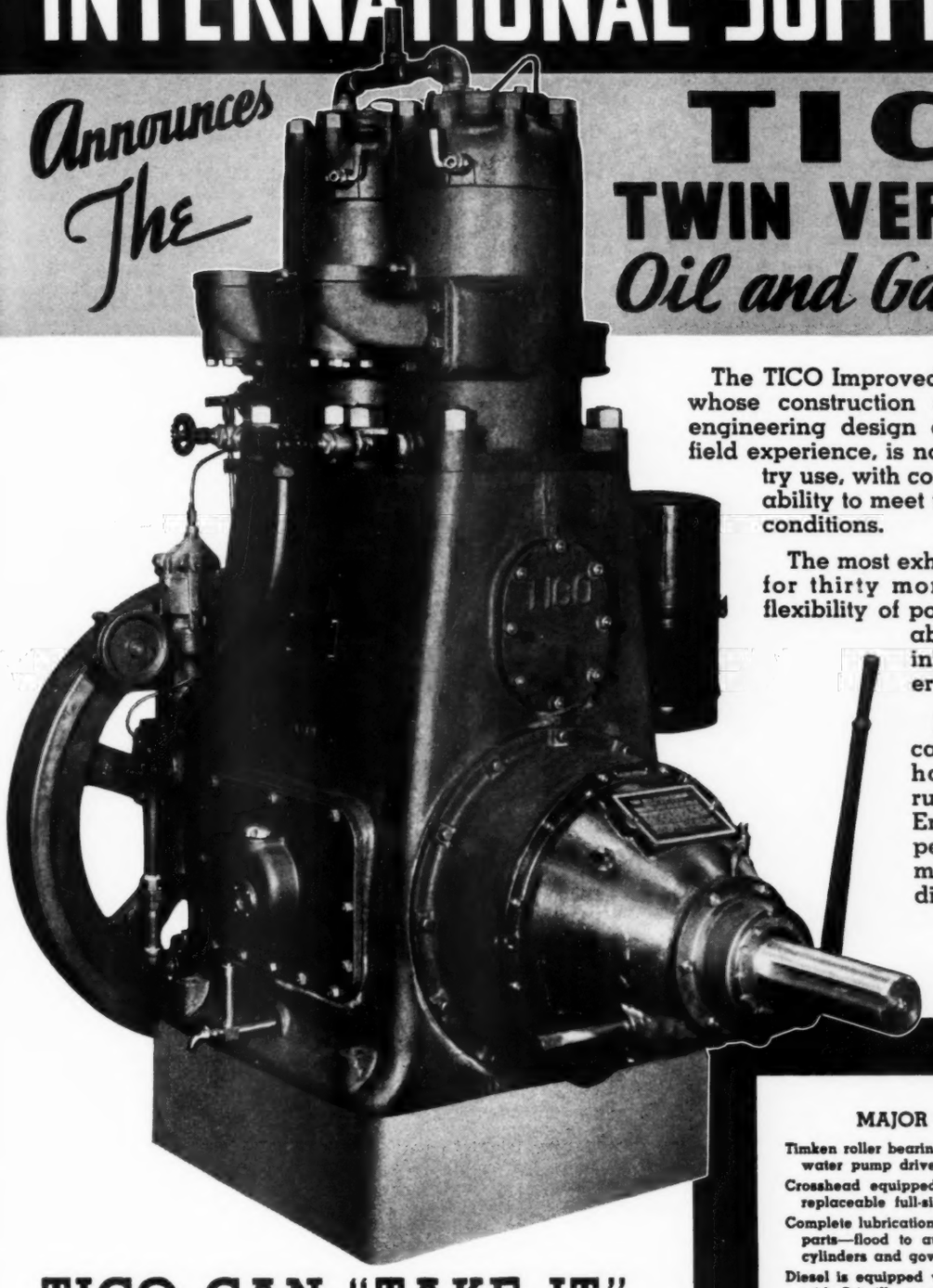
The following new work was reported in Russell County: Urschell & Seeligson No. 2 Polcyn, SE SW NE section 10-14-15w, rotary rig; same operators' No. 3 Polcyn, NW SW NE section 10-14-15w, moving in material; W. I. Southern, Inc. No. 4 Sellens heirs "A," NE NE SW section 30-15-13w, cellar; Derby Oil Co. and Reserve Petroleum Co. No. 1-A Michaelis, NE SE NW section 31-15-13w, cellar.

Equity Gas Co. No. 2 Gross, SW NW NE section 31-13-12w, Russell County, topped Kansas City at 3,003 feet; had a hole full of oil in pay at 3,015-20 feet; acidized with 6,000 gallons at 3,033

INTERNATIONAL SUPPLY CO.

Announces The

TICO TWIN VERTICAL *Oil and Gas Engines*



The TICO Improved Twin Vertical Engine, whose construction and features combine engineering design and years of practical field experience, is now offered for oil industry use, with complete confidence in its ability to meet the most severe oil field conditions.

The most exhaustive and trying tests for thirty months have proven its flexibility of power and speed and its ability to withstand high initial pressures when operated on oil.

Designed for economical operation, yet built for hard use and uninterrupted service. The Tico Engine reflects the dependability of both its manufacturer and its distributor.

MAJOR SPECIFICATIONS

- Timken roller bearing crankshaft, auxiliary drive and water pump drive.
- Crosshead equipped with two bronze shoes and a replaceable full-size wrist pin bushing of bronze.
- Complete lubrication is effected by splash to all main parts—flood to auxiliary drive and force feed to cylinders and governor.
- Diesel is equipped with Bosch injection—gas engine with Scintilla magneto.
- Pickering governors.
- Torrington lubricators.
- Nickel cast iron cylinders.
- Alloy die-forged crankshaft.

TICO CAN "TAKE IT"

Ask Any of These International Stores

OKLAHOMA		TEXAS		KANSAS	NEW MEXICO
Tulsa	Oklahoma City	Pampa	Turnertown	Hutchinson	
Seminole	Wewoka	Houston	Wink	McPherson	Artesia
Maud	Ada	Kilgore	Kermit	Chase	Hobbs
		Willow Springs		Hays	

INTERNATIONAL SUPPLY CO.

▶▶▶ TULSA, OKLAHOMA ◀◀◀

feet, total depth, and was waiting. Smoky Hill Oil Corp. No. 7 Miller, SE SW SW section 30-14-13w, topped Kansas City at 2,830 feet, drilled to 2,900 feet, total depth, and oil rose 1,700 feet in the hole in 12 hours. Coralena Oil Co. No. 13 Trapp, NW NW SE section 30-15-13w, had Siliceous lime at 3,249-53 feet, total depth, and oil rose 3,200 feet in the hole in two hours. W. I. Southern, Inc. No. 1 Michaelis, NE NE NW section 31-15-13w, topped Siliceous lime at 3,265 feet; total depth, 3,270 feet, and made potential of 2,437 bbls., but was not completed.

Ellis County

Completions in Ellis County included three oil wells and two failures. Margay Oil Co. No. 6 Bemis "A," SE NE SE section 16-11-17w, made potential of 2,124 bbls. of oil and was completed at 3,368 feet, total depth. It topped Simpson formation at 3,341 feet; Siliceous lime, 3,362 feet.

Harris & Haun No. 1 Karlin, NW NW NE section 10-13-17w, topped anhydrite at 1,189 feet; Oswald lime, producing formation, 3,268 feet; Siliceous lime, 3,530 feet; total depth, 3,550 feet; plugged back to 3,400 feet to complete. After acidizing with 5,000 gallons, it made potential of 632 bbls. of oil.

Wolf Creek Oil Co. No. 1 Dreiling, NW NW SW section 4-12-17w, pumped 50 bbls. of oil in 24 hours before acidizing with 2,500 gallons, and afterward made potential of 376 bbls. of oil. Top of anhydrite was 1,285 feet; Topeka, 3,042 feet; Oswald lime, producing horizon, 3,300 feet; total depth, 3,350 feet.

Derby Oil Co. No. 1 Copeland, NW NW SE section 26-14-19w, topped anhydrite at 1,350 feet; Kansas City, 3,417 feet; Siliceous, 3,743 feet; La Motte sand, 3,774 feet, had water in the hole and was dry and abandoned at 3,795 feet, total depth. Gulf Oil Corp. No. 1 Alex Klaus, SW SW NE section 26-14-19w, had water showing in cores and was dry and abandoned in Siliceous lime at 3,804-23 feet, total depth. Top of anhydrite was 1,355 feet.

New work in Ellis County: Uscan Oil Co. No. 6 Bemis, C S half N half NE section 21-11-17w, cellar.

Taylor and others No. 1 Emery, NE cor. section 23-14-18w, Ellis County wildcat, topped Siliceous lime at 3,558 feet; total depth, 3,570 feet. It pumped 40 bbls. of oil and 10 bbls. of water in 20 hours, and had 1,300 feet of water and 250 feet of oil in the hole.

Reno County

R. J. Wallace and others No. 1 Tucker, NE NW SW section 20-24-4w, southwestern sector of Burrton district, was the largest well completed in Reno County. After acidizing with 1,000 gallons, it made potential of 2,088 bbls. of oil, with some water, in 24 hours. Production was from Chat topped at 3,330 feet, with an increase of oil at 3,378-83 feet, and at 3,390 feet, total depth.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 J. F. Moore, NE NE SE section 8-26-4w, Hilger pool, topped Viola lime at 4,035 feet, drilled to 4,041 feet, total depth, and plugged back to 4,039 feet, produced 10 bbls. of oil and 20 bbls. of water and was completed. Top of Topeka lime was 2,295 feet; Chat, 3,604 feet.

Olson Drilling Co. and Sinclair Prairie Oil Co. No. 5 Adkins, SW NW SW section 35-23-4w, Burrton area, topped Chat at 3,258 feet, was bottomed at 3,317 feet, produced 8,000,000 feet of gas and was completed.

The following new work in Reno County was reported: Shell Petroleum Corp. No. 4 Seedle, NW SW NW section 16-24-4w, was building rotary rig.

Rooks County

The new pool opener in Rooks County, the L. C. D. Drilling Co. and others No. 1 Wasthusin, C NE SE section 11-9-17w, wildcat about 12 miles north of the Bemis pool in northern Ellis County, was completed. After acidizing with 5,000 gallons, it made potential of 504 bbls. of oil, with 252 bbls. of water, the water coming from above the oil pay. Production was from Oswald lime topped at 3,141 feet, with pay at 3,231-42 feet; total depth, 3,243 feet. Top of anhydrite was 1,260 feet; Topeka lime, 2,894 feet.

Sedgwick County

Continental Oil Co. completed No. 3 Goodrich, NE NE SW section 16-25-1e, in the Goodrich pool, northern Sedgwick County. It topped Chat at 2,985 feet; based Mississippi at 3,257 feet; topped Dolomite at 3,334 feet, and was bottomed at 3,336 feet. It made potential of 487 bbls. of oil, with 172 bbls. of water. Continental Oil Co. and Gulf Oil Corp. No. 7 Wright, NW NE SE section 12-26-1w, an old well, was deepened to granite at 4,190-4,275 feet, total depth, and completed as a water disposal well.

Fisher & Lauck No. 12 Trustee, SW NW SE section 19-27-2e, was a location.

Butler County

Hutchinson Oil & Gas Co. and others No. 1-A Westfall, SE SW SE section 13-27-3e, Butler County wildcat, topped Wilcox sand at 2,995 feet and was dry and abandoned at 3,040 feet, total depth. Simpson Oil Co. No. 1 Dahlem, SW cor. section 11-26-6, wildcat, topped Wilcox sand at 3,207 feet; had Siliceous lime at 3,289-92 feet, total depth, with water increasing, and was dry and abandoned. Ed Solomon No. 1 Church, SW NE SE section 8-28-5, wildcat, was abandoned at 200 feet, total depth. National Refining Co. No. 3 Sutter "A," SE NW NE section 1-28-6, was completed as a water disposal well at 3,199 feet.

One new operation was reported in Butler County. T. C. Johnson was moving in material for No. 3 Beedles-Swenson, NE SW NE section 8-27-6.

Barton County

It was a quiet week in Barton County, only one new well being completed. Vickers Petroleum Co. and T. C. Johnson No. 1 Ehly, SW cor. section 15-16-12w, Beaver pool, topped sand at 3,331 feet, drilled to 3,345 feet, total depth, and made potential of 311 bbls. of oil, with some water. Top of anhydrite was 788 feet; Topeka lime, 2,680 feet; Kansas City, 3,056 feet; Conglomerate, 3,321 feet.

The following new work was reported in Barton County: Skelly Oil Co. No. 5 Bloomer, NW SE NE section 36-17-11w, rigging up rotary; same operator's No. 6 Bloomer, SW SE NE section 36-17-11w, rigging up rotary; Morgan & Flynn No. 1 Brack, NE cor. section 21-18-15w, building rig; Stanolind Oil & Gas Co. No. 1 H. C. Burmeister, NE cor. section 35-19-11w, location; Indian Territory Illuminating Oil Co. No. 1 Schrapel, SE SE NE section 26-20-11w, wildcat location.

McPherson County

Ohio Oil Co. No. 7 Decker, NW NE NE section 20-21-1w, Graber area, was the only new well completed in McPherson County. After acidizing with 2,000 gallons, it made potential of 632 bbls. of oil. Production was from Hunton lime, topped at 3,301 feet; total depth, 3,347 feet. Best pay was at 3,336-40 feet. Top of Chat was 2,942 feet.

Shawver & Smith No. 2 Kaedi, NE NW NW section 21-19-1w, an old well, was deepened from 2,968 feet to 3,434 feet, made potential of 227 bbls. of oil on a two-day average, and was recompleted. Top of Viola lime was 3,383 feet; Simpson, 3,408 feet; Wilcox sand, 3,425 feet. Production was from Wilcox sand.

Lario Oil & Gas Co. and others No. 4 Lagree, NE NE NW section 31-19-1w, is a McPherson County location. Shell Petroleum Corp. No. 2 Meyers "A," C SE NE section 14-19-2w, was building rig; Tom Dickey and Gulf Oil Corp. No. 5 Goering, SE SW SE section 17-21-1w, was building rotary rig.

Cowley County

The eighth oil well in the Weathered pool, Cowley County, at Lloyd, Study & Frost No. 2 McKinley "B," NE SE NW section 33-31-3e. After drilling to 3,283 feet, total depth, in Siliceous lime topped at 3,265 feet, it made potential of 2,887 bbls. of oil. It is the largest of the eight wells, all owned by the operators, who opened the area in 1935.

Craft and others No. 1 Whitson, NE cor. section 20-33-4, wildcat, was drilled to 50 feet, total depth, and abandoned.

Dowling & Modeer and others No. 1 Barnett, NW NW SE section 18-32-5, Winfield area, was dry and abandoned at 855 feet, total depth.

Roth & Faurot No. 7 Brant, SW SE NE section 12-32-4, the only new Cowley County test, was building rig.

Sumner County

Two new producing wells were completed in the prolific Wellington district of Sumner County. Stelbar Oil Corp. No. 10 Erker, SE SW SW section 33-31-1w, topped Chat at 3,635 feet, drilled to 3,676 feet, total depth, and flowed 165 bbls. in 11 hours. It was acidized with 3,000 gallons, flowed 612 bbls. in six hours and made potential of 1,755 bbls.

Continental Oil Co. No. 1 Rothrock, NW cor. section 4-32-1w, made potential of 1,089 bbls. of oil after acidizing with 2,000 gallons. Previously, it was acidized with 1,000 gallons and flowed 108 bbls. of oil in 1 hour and 30 minutes. Production was from Chat, topped at 3,624 feet, total depth, 3,669 feet.

Stelbar Oil Corp. No. 1 Rothrock, NW NE NW section 4-32-1w, was location for a new Sumner County well. Lloyd, Frast & Study and others No. 1 fee, SE cor. section 31-34-1e, wildcat, was rigging up rotary.

Trego County

Black Gold Oil Co. No. 1 Allman, C SW SW section 34-14-21w, is a location for a wildcat in Trego County, southeast of the Riga area.

Harvey County

Tom Palmer and others No. 1 Warkentine "B," C W half NW SW section 1-23-2w, Harvey County, was drilling at 600 feet. Same operators' No. 1 Haury "B," C SE NE section 11-23-2w, was a cellar.

Pratt County

Skelly Oil Co. and others No. 4 East Maxedon, SW SW NE section 25-27-11w, was a location.

Chautauqua County

Union Gas Co. No. 8-A Wilson, NW NE SW NE section 14-33-12, northeast of Sedan, Chautauqua County, in the old southeastern Kansas stripper area, was bottomed in top of Siliceous lime at 1,819 feet, and flowed 65 bbls. of oil an hour for three hours through 2-inch tubing, with 110 pounds back pressure. This is an unusually large well for that part of Kansas.

Coffey County

Harrigan Brothers No. 1 Wiley, SE SE NE section 14-23-14, Coffey County, topped Mississippi lime at 1,610 feet and was completed in pay at 1,624-31 feet, total depth. It was acidized with 3,000 gallons and made potential of 162 bbls. of oil.

Woodson County

McClintock & Smith No. 2 Vostarz, SW SW NE section 23-23-14, Woodson County, topped Mississippi lime at 1,605 feet; had first showing of oil at 1,616-22 feet, but was dry and abandoned at 1,675 feet, total depth. Bell & Alexander No. 2 Kash, SW NW NW section 26-23-14, had Mississippi lime at 1,619-34 feet, total depth, failed to make a producer by acidizing with 3,000 gallons and was dry and abandoned.

Greenwood County

Lucille Oil Co. No. 1 Teichgraeber, C NW NE section 11-25-8, in Teichgraeber pool, Greenwood County, was estimated good for 3 bbls. of oil per day and completed in sand at 2,317-37 feet, total depth.

C. L. Sheedy and others No. 1 Lindemood, C SW SW section 7-25-13, wildcat, topped lime at 1,591 feet, with a showing of oil at 1,603-07 feet, but had a hole full of water at 1,620 feet, total depth, and was dry and abandoned.

Lucille Oil Co. No. 7 Teichgraeber, SE SE NW section 11-25-8, was drilling at 1,100 feet. Hollis and others No. 1 Boone, NW NE NE SW section 21-26-12, wildcat, was moving in material.

Marion County

Harwood Oil Co. and others No. 1 W. H. Mott, NE cor. section 2-17-4e, wildcat in Marion County, was dry and abandoned at 2,361 feet, total depth. It topped Chat at 2,292 feet.

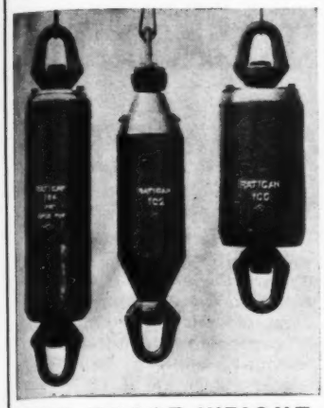
Rush County

Chris L. Sheedy No. 1 Bison, SW cor. section 35-16-17w, Rush County wildcat, was dry and abandoned at 3,700 feet, total depth. Top of anhydrite was 1,140 feet; Kansas City, 3,323 feet; Conglomerate, 3,554 feet; Siliceous, 3,605 feet; La Motte sand, 3,618 feet; hole full of water, 3,628 feet.

G. M. Piggott and others No. 1 Maresch, C

(Continued on Page 80)

RATIGAN
SUCKER ROD
LINE WEIGHTS



THE EXACT WEIGHT YOU WANT

These Ratigan Sucker Rod Line Weights are time-and-labor-saving hollow shells which the operator can quickly build up to any desired weight by using sand, scrap iron, babbitt or lead. Equipped with ball-bearing swivel and "C" link at each end, link being opened automatically by a quick-acting safety pin.

No. 100 weighs 118 lbs. empty; can be built up to 500 lbs. No. 102 weighs 110 lbs. empty; can be built up to 300 lbs. No. 104 weighs 123 lbs. empty; can be built up to 500 lbs. Strong enough for the longest string. Descriptive folder on request.

J. P. RATIGAN
Manufacturers of
RATIGAN "SURE-GRIP" Appliances
1213 Santa Fe Ave., Los Angeles, California
Ratigan Products Can Be Purchased At Leading Supply Stores

EST. 1830 WALL WAX LAID ROPE

Complete stocks of Oil Field Cordage carried in Mid-Continent and Gulf Coast Fields

WALL ROPE WORKS, Inc.
Houston, Texas
2000 Nance St. Telep. Cap. 0244

Now you can easily and economically take cores from the side walls of an uncased hole, to check correlating equipment or when cores have been lost. Look

on Page 192 of the 1936 Composite Catalog for details of the BAKER ROTARY HYDRAULIC WALL SAMPLER.

Among Gulf Coast Drilling Contractors

Smith & McDanald received contracts for four wells the past week, making a total of 11 strings of tools that this firm will have running by the end of the week. At South Houston, No. 2 Butz and No. 4 Holland & Price will be drilled for Stanolind Oil & Gas Co. No. 5 Stewart will be drilled at Louise for Pure Oil Co., while in Coastal Louisiana a rig is being moved to St. Martin Parish for a deep test to be drilled for Shell Petroleum Corp. In the meantime seven rigs are located as follows: One at Conroe for themselves, one at Bosco for Superior Oil Producing Co., one at Sorrento for Pan American Production Co., one at Long Lake for Tide Water Oil Co., one at Dickinson for Pan American Production Co., one at Liberty County for May and others, and one at East Hackberry for Superior Oil Producing Co.

George Echols has apparently marked up a mile and a quarter west extension for the Quintana-O'Connor field in Refugio County as preparations are being made to test No. 1 Lambert for Josey & Bruton, which is bottomed at 5,903 feet with 7-inch casing cemented at 5,888 feet. One string of tools has been moved to the Placedo field for Commonwealth Oil Co. No. 4 Prencia, while two others are located at the Gillis field in Calcasieu Parish for Fohs Oil Co. and one in Live Oak County for the Sun Oil Co.

H. J. DeArman is moving his large diesel rig to the Bosco field in Acadia Parish, where he will work over No. 2 Mouton for the Standard of Kansas.

Edwards Drilling Co. is moving a rig to the Needville Prospect in Fort Bend County to drill No. 1 Horak for Sam Harrison. A core is being taken in the Dickinson field for Coast Petroleum Corp. No. 4 Maco Stewart, preparatory to making plans for a test, while in Hidalgo County No. 1 McDougall is drilling below 2,700 feet. Contract has been awarded Mr. Edwards by Sam Harrison for a wildcat in Wharton County to be drilled near the town of El Campo.

Nicklos Drilling Co. is drilling below 3,500 feet on Pan American Production Co. No. 1 Harrang at the Valentine Prospect in Lafource Parish; is preparing to run casing to 8,318 feet on Continental Oil Co. No. 2-B Young at the Tepetate field and is drilling below 3,249 feet on the same company's No. 8-A Homeseekers Development Co.

Loffland Brothers completed No. 1 Ardoin at Tepetate for Continental Oil Co. and it flowed 213 bbls. per day through a 5/32-inch choke from a depth of 8,313 feet. No. 1 Ortego is drilling below 7,300 feet and a rig is being moved to another location.

Rowan Drilling Co. is drilling below 7,200 feet on Tide Water Oil Co. No. 1 Landgrof in Refugio County; is drilling below 3,800 feet on La Crusader Oil Co. No. 1 State in East Baton Rouge Parish; is drilling below 3,800 feet on Tide Water Oil Co. No. 2 Manhattan Fruit Co., located on the Venice dome in Plaquemines Parish, and has marked up a south extension to the Fairbanks field in Harris County by the completion of Amerada-Stanolind Oil & Gas Co. No. 1-A Dopslauf, which flowed 41 bbls. of pipe line oil in four hours through a 11/64-inch choke from perforations made in the casing from 6,825-27 feet.

Rutherford Drilling Co. is nearing the sand on three wells at the Van Vleck field for the Skelly Oil Co. No. 11-B Cobb is drilling for the 8,200-foot sand below 7,805 feet, No. 12-B Cobb is below 7,440 feet and No. 13-B is below 7,135 feet.

Cron & Gracey have eight active rigs located as follows: One at Manvel for the Texas Co., one at Roanoke and Iowa fields for Shell Petroleum Corp., one at Hitchcock for Shell Petroleum Corp., one at South Houston for Stanolind Oil & Gas Co., one at Amelia for Texas Co., one at St. Martinsville for Continental Oil Co. and one in Wharton County for the Shell Petroleum Corp.

Ben (Bud) Coyle received contract last week from the Herton Oil Co. for No. 3 Carter to be drilled at Jeanerette in St. Mary Parish. No. 4 Roane, which is being drilled for the same company, is drilling ahead below 5,745 feet.

There were 21 new locations reported along the Texas Gulf Coast the past week and only two were wildcats. In Brazos County, Jack Holter has rigged up No. 1 Lewis. The other location was at Needville, where Harry Edwards will drill for Sam Harrison. Two wells were started at the Heyser field in Calhoun County by Humble Oil & Refining Co. and Portilla Oil Co. At Dickinson a location has been announced for Kenben Oil Co. No. 3 Stewart, while at Keran, in Victoria County, Gulf Oil Corp. has rigged up for No. 9 Keran. At Placedo, American Liberty Oil Co., Commonwealth Oil Co. and Ownby Drilling Co. are starting new work in that field. Texas Co. has rigged up for two wells at the Pickett Ridge and Withers field for No. 3 Nilson and No. 18-C Pierse, respectively. The other locations were made by Humble Oil & Refining Co. at Raccoon Bend for two wells, one at Conroe for No. 1 Urech and No. 4 Marshall at the Anahuac field, and Gulf Oil Corp. and Stanolind Oil & Gas Co. are starting new work at the Anahuac, Hull and Hastings field for No. 1 Wilcox, No. 22 Baldwin, No. 114 Phoenix and No. 1 Blount.

Shell Petroleum Corp. outbid three other companies for a 4,300-acre lease on Ramsey prison farm in Brazoria County, with $451,500 cash and a bonus.

W. A. Paddock, chairman of the prison board, said the Shell lease was double that of the nearest competitor. This company now holds a lease on 857 acres at the north end of the farm and has made a location to drill a well. The board for leasing prison lands rejected as unsatisfactory bids on 2,500 acres on Darrington farm.

Bids are to be taken December 16 at the state land office on oil leases on submerged state land in Highland Bayou, Galveston County, and in parts of Laguna Madre, Corpus Christi Bay and Ozo Creek, Nueces County.

When you set a string of casing you need a strong FLOAT SHOE

With a positive LEAKPROOF valve that has PROPER CIRCULATION AREAS

And you must be able to drill out and dispose of the plug and valve completely and easily.

That's why you need a BAKER CEMENT WHIRLER FLOAT SHOE.

Standco
NO-SMOKE
STANDCO BRAKE LINING
Nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 1204, Composite Catalog.
STANDARD BRAKE LINING CO.

Hoard Exploration Co.
Seismograph Surveys
623 Esperson Bldg.
Houston - - Texas

Bowen Rotary Releasing SPEAR

A sturdy simple effective tool used for: loosening stuck casing, removing liners, left handing casing or tubing from wells and also a liner setting tool. Also used for holding casing while the upper joint is being removed to screw on a nipple cut to the proper length for a permanent landing.

Its releasing mechanism has never been known to fail, even when used under most adverse conditions.

S. R. BOWEN CO.
HUNTINGTON BEACH, CALIFORNIA

Service in all Principal California Fields
Bowen Co. of Texas, 202 Vincent St., Houston, Texas.
30 Rockefeller Plaza, New York City.

Eastern Field Report

By STAFF CORRESPONDENT

21 ROUTINE GASSERS LEAD IN THE RESULTS OF PAST WEEK

PITTSBURGH, Pa., Nov. 30.—Completions were mostly routine in the lower eastern fields during the past week and totaled 30, 4 were dry, 21 gas wells and 5 producers with an initial production of 134 bbls. Practically all of the new production was in Southeast Ohio.

SOUTHEAST OHIO

No deep tests were completed in Southeast Ohio. In section 25, Wayne Township, Columbiana County, Natural Gas Co. of West Virginia on the William Grafton farm was within few feet of the Oriskany sand. In Madison Township this company's test on the Finegold farm is drilling in the Onondaga at 4,326 feet. The test, 1 mile north of the Jenkins well on the Albert Ketchum farm, is now drilling down from the Berea sand.

Ira Hazlett and others on the S. M. Gutridge farm, section 18, Hopewell Township, Licking County, drilled into the Clinton sand, total depth 3,108 feet, and completed an 85-bbl. well after the shot. In Perry Township of this county, McClay Brothers completed No. 3 George Boyd, section 3, in Clinton sand at 2,987 feet. It had a light showing of oil with only a fair amount of gas and has not been shot.

In Athens County, A. D. Townsend and others completed a second test on the J. H. Hartley farm near Jerseyville in section 17, Lodi Township, in Berea sand at 1,672 feet. It is a gas well gauging 368,000 feet a day.

In Coshocton County the Preston Oil Co. completed a test on the A. Underwood farm in section 16, Perry Township, in the Clinton sand at a depth of 3,131 feet. It is a gas well gauging 1,500,000 feet per day.

In Jefferson County, C. S. Kelley and others No. 14 Ella S. Baxter, section 30, Saline Township, was completed in Berea sand at 1,275 feet. It produced 2 bbls. the first day after shot.

In Knox County, section 21, Union Township, the Knox Exploration Co. completed a test on the C. H. Simmons farm in Clinton sand at 3,234 feet. It produced 40 bbls. the first day after shot. In section 23, Butler Township, Ohio Fuel Gas Co. completed a 1,500,000-foot gas well on the Lemard Stricker farm in Clinton sand. On Lot 8 in this township, this company drilled a dry hole on the Palmer Beal farm through the Clinton sand.

In Noble County, L. A. Patten completed No. 11 Mary Shilling farm, section 9, Jefferson Township, in the Macksburg 700-foot sand at 974 feet. It produced 3 bbls. the first day after shot.

In Tuscarawas County the Ohio Fuel Gas Co. drilled a test on the Benjamin J. Crowthers farm in section 22, Clay Township, through the Clinton sand to a depth of 5,426 feet. It was a dry hole.

In Washington County the Henry Oil & Gas Co. drilled a second test on the D. B. Mulinex farm on Sacket Run in section 27, Ludlow Township, through the Squaw sand to a depth of 1,365 feet. It was dry.

SOUTHWEST PENNSYLVANIA

In Greene County, James H. Null, agent, completed deepening No. 1 David Null farm in Springhill Township at 2,362 feet. It is a gas well gauging 149,000 feet a day from the Third Salt sand. In this township, Union Gasoline & Oil Corp. is drilling at 2,000 feet in No. 6 Lloyd Strope. The North Eastern Gas Co. is down 2,600 feet in No. 2 on the F. Burley and T. B. Ward farm. Null & Moorhead are fishing at 1,900 feet for the tools in the Hixenbaugh test.

In Perry Township, Greene County, the Peoples Natural Gas Co. is drilling at 2,805 feet on the C. H. Lemley farm. In Greene Township the Equitable Gas Co. has reached 2,845 feet in the test on the Dr. A. B. Core farm. In Wayne Township, H. D. Freeland & Co. are cementing a cave at 2,080 feet in the No. 3 on the D. L. Freeland farm. In Aleppo Township, B. L. Frye is fishing for tools lost at 2,149 feet on the Milton Martin farm.

In Center Township the Penn Ohio Oil & Gas Co. is rigging up the test on the W. L. Funk farm. The Carnegie Natural Gas Co. has the road cleared and is hauling in material for the No. 2 on the J. W. Milliken farm.

In Washington County, the Union Gasoline & Oil Corp. is rigging up No. 2 M. Varner in Amwell Township, and building rig on the A. O. Vankirk farm. The company's No. 2 Martha Hazlett is shut down at 2,750 feet to test the casing. The South Penn Oil Co. has a fishing job in No. 3 J. Q. Zimmerman, depth 1,810 feet. A. V. Lewis and others have not recovered the tools in the test on the William Mankey farm. The Manufacturers Light & Heat Co. has started drilling No. 2 on the Rankin farm. The Wise Oil & Gas Co. is down 2,250 feet on the No. 2 C. W. Dunn.

In Peters Township, Washington County, the Carnegie Natural Gas Co. is down 840 feet in a test on the George Douglass farm. In Morris Township this company is moving in the rig on the H. Q. Stockdale farm. In South Franklin Township the same company has the rigs on the ground for tests on the C. T. Dodd and L. B. Dickerson farms and in Jefferson Township, Fayette County, is drilling at 585 feet on the Gaskill farm. In Dunkard Township, Greene County, this company is grading roads for tests on the Ella B. Parker farm and the Dale Brand farm.

In Somerset Township, Washington County, the Mingo Oil & Gas Co. is drilling the test on the Clark Preston farm at 1,675 feet and is building a rig for a test on the J. A. Adams farm.

WEST VIRGINIA

In Pleasants County, West Virginia, the Feeney Oil Co. completed a test on the C. Cornell farm in Jefferson district at a depth of 1,935 feet. It is a 4-bbl. well from the Maxon sand, the top of which was 1,402 feet.

Sixteen gas wells were completed. In Cabell County the DeJarnette Gas Co. completed a second test on the J. H. DeJarnette farm in McComas district at a depth of 1,426 feet. Big Injun was found at 1,418 feet with 787,000 feet of gas at 1,423-26 feet. This company located No. 3 on this farm. In this district, Lusher & Lusher completed a well on the Floyd Adkins farm at a depth of 3,392 feet, with Brown shale at 2,740-3,357 feet and 342,000 feet of gas at 2,917-3,325 feet.

In Cabell County the United Fuel Gas Co. completed No. 4,670 on the E. D. Meadows farm in McComas district as a gas well gauging 104,000 feet a day from a depth of 3,157 feet, Brown shale 2,790-3,147 feet with gas at 3,110-35 feet.

In Calhoun County, F. F. McIntosh and others completed a test on the Lloyd Yoak farm in Sherman district in the Berea sand at 2,650 feet. It is a gas well gauging 250,000 feet a day. In this district, D. R. Fowler and Creed Barker completed a test on the Cora Stump farm in the Injun sand at 1,925 feet. It is showing 370,000 feet of gas a day.

In Gilmer County the West Virginia Utilities Co. completed No. 3 on the John J. Gerwig farm in Center district. Big Injun sand was found at 1,777-1,872 feet with gas at 1,828-39 feet and 1,853-69 feet. It gauges 612,000 feet a day.

In Kanawha County the West Virginia Gas Corp. completed a test on the Campbell and McClintic lease in Union district in the Shale at a depth of 3,900 feet. It gauges 1,125,000 feet a day. In Elk district the United Fuel Gas Co. completed a small gas well in the test on the H. C. Walker farm at a depth of 2,080 feet.

In Lewis County the McCall Drilling Co. drilled a test on the Ruby and H. C. Rinehart farm in Freemans Creek district through the Gordon sand and it was dry and is being abandoned. The Big Lime was at 1,498-1,560 feet; Big Injun sand 1,560-1,670 feet.

In Logan County the Boone County Coal Co. completed No. J-10 on their own property in Logan district. The Big Lime was at 2,123-2,300 feet; gas show 2,230 feet; gas 2,255 feet; gas 2,263-66 feet; Big Injun 2,300-58 feet with gas at 2,330 feet; Berea 2,802-34 feet with gas at 2,814 feet. The Big Lime and Big Injun gas gauges 284,000 feet a day and the Berea gas 720,000 feet a day. It is also producing some oil.

In Marion County the Carnegie Natural Gas Co. completed a test on the P. M. Hibbs farm in Mannington district at a total depth of 3,437 feet. It is a small gas well from the Gordon and Fifth sands and gauges 54,000 feet a day.

In Marshall County, Guy B. and A. C. Patterson, on the W. B. Patterson farm in Liberty district, completed a Maxon sand gas well gauging 612,000 feet a day with the top of the sand at 2,151 feet and gas at 2,153-58 feet.

In Ritchie County the Pittsburgh & West Virginia Gas Co. No. 6,901 on the C. A. Garrison farm in Union district is a small gas well in the Injun sand at a depth of 2,171 feet. In Murphy district, Cairo Oil Co. and others on the Cleo Boggess heirs got an Injun sand gas well gas well gauging 75,000 feet and about a half barrel of oil a day.

In Roane County, L. C. Young and others No. 3 A. N. Kee farm in Harper district was drilled to 1,716 feet with the top of the Salt sand at 1,669 feet and gas at 1,674-85 feet and 1,707-16 feet. It gauges over 5,000,000 feet a day and is a completion.

In Washington district, Kanawha County, United Fuel Gas Co. completed No. 4,617 on Mohler Lumber Co. land at 3,559 feet; Brown shale at 2,825-3,665 feet with gas at 2,235-39 feet and 2,926-3,543 feet. It gauges 612,000 feet a day.

Oriskany Gas Field

In Elk district, Kanawha County, Columbian Carbon Co. completed a test on the Everett Copenhaver farm as a gas well in the Oriskany sand which was topped at 4,833 feet. It has a small showing of 125,000 feet a day and has not been shot.

Eight more wells are now drilling in the Corniferous lime in this county and should soon reach the Oriskany. In Malden district, Godfrey L. Cabot, Inc., reached the top of the Corniferous at 5,038 feet in the No. 2 Plus R. Levi and now drilling at 5,084 feet. This operator reached the Corniferous lime at 4,424 feet in the Nellie B. Tompkins No. 4 and is drilling at 4,445 feet.

In Elk district, Kanawha County, the United Fuel Co.'s test on the C. B. Graham was small after shot and gauged only 859,000 feet a day. This company's test on the G. C. Cavender farm reached the Corniferous at 4,772 feet and is drilling at 4,793 feet. The Columbian Carbon Co.

(Continued on Page 80)

East and East Central Texas

By
L. E. BREDBERG

THIRTEEN NEW TALCO WELLS; LIVELY WEEK IN EAST TEXAS

DALLAS, Tex., Nov. 30.—Thirteen wells were completed in the Talco field in the past week, only one of which was on the Franklin County side of the line. At the same time six locations were staked. One of the completed wells was put on the pump, three were completed swabbing and another made 1 per cent salt water when completed making 306 bbls. of oil in 24 hours through 2½-inch tubing.

One small refinery is operating at Talco on crude from the field and the Constantin Refining Co. is erecting a small skimming plant in the Talco townsite, and Premier Asphalt Co. is erecting a plant at Mount Pleasant to handle Talco crude. Only one pipe line leads out of the field, but loading racks facilitate the movement of considerable oil by way of tankcars.

No completions were reported in the Sulphur Bluff pool in Hopkins County, where there are five tests drilling. The Empire Oil & Refining Co. has joined in the development, announcing three locations.

Wildcatting

One wildcat in the district was abandoned and location made for only one other outside test although a second test is to be drilled about 1 mile north and a little west of the Wood discovery well in the small Rusk pool in Cherokee County. Dr. A. R. Noacock of Gladewater and others are to sink this test to 5,000 feet, or in quest of the Rusk pool pay. Location is on lands of Mrs. Betty Pryor in the J. T. Jones Survey, 4½ miles southwest of Rusk. The other test is to be near Fairfield in Freestone County and will seek production from the Woodbine sand. Location may be noted on the East Texas drilling report.

J. V. McMahon of Oklahoma is preparing to drill a 5,500-foot Paluxy sand test on a block of acreage assembled in Titus and Camp counties by George H. McIntyre and T. C. Brannon of Fort Worth, location having been made for the test to be drilled in the center of the 1,700-acre Stephens tract in the Joseph Meacham Survey, near the center of a block of 10,000 acres. About 8,000 acres of the block is in Titus and the remainder is over the line in Camp County.

Fannin Test

G. Trippe of Dallas is preparing to drill a 6,000-foot test on a block of 7,000 acres just north of Randolph. The location is expected to be made on the Nathan Young tract just south of Randolph and north of Bois d'Arc Creek. Paluxy production will be sought in this test.

The Valeria Oil Corp. has abandoned its No. 1 G. D. Galloway, located in the W. M. Rice Survey, 1½ miles south of Leonard in the southwestern part of Fannin County. Total depth is 3,527 feet and elevation is 695 feet.

Leasing and seismograph shooting activity has been ranging from the Louisiana line, during the last few weeks down through the counties adjacent to Rusk and as far west as Henderson in that county, major companies taking leases throughout the area following geophysical exploration work. Companies holding acreage have been augmenting their holdings and those not having previous holdings are entering the sector for protection.

East Texas Field

Thirty-four locations were made and 45 wells completed in the East Texas field. All completed wells proved producers, two of which were pumpers and three completed swabbing. One of the new wells came in making 60 per cent salt water. It was also a pumper.

Rumors are to the effect that the Shell Pipe Line Corp. and Phillips Pipe Line Co. will lay a line to connect the Rodessa field with the Shell Pipe Line Co.'s main line out of the East Texas field. Such a line would probably be an 8-inch and will be around 50 miles in length.

Verification cannot be obtained in regard to the Atlantic Pipe Line Co. contracting with the owners of the Hartwig Pipe Line Co. which operates the 8-inch line laid early this year by the East Texas Pipe Line Co. from Longview to the Rodessa field. The unverified report is that Atlantic will transport Rodessa crude to the Horton Station of the Atlantic company near Longview, from which place the crude could be transported through the Atlantic's trunk line to Atreco on the Gulf Coast.

Purchase

The Gilcrease Oil Co. has taken over the Urban Oil Co.'s H. H. Edwards lease in Upshur County, which contains 71 acres with 12 flowing wells, paying a reported price of $522,500. E. D. Davenport of Dallas owns a three-eighths interest in the property. This is one of the largest leases sold in the field for some time, although many small tracts containing one or more wells have been changing hands from time to time.

EAST CENTRAL TEXAS COMPLETIONS

Fannin County

Valeria Oil Co. No. 1 G. D. Galloway, dry and abandoned 3,527 feet, elevation 695 feet, 1½ miles south of Leonard.

Franklin County

Lucy Petroleum Co. No. 10 Crawford, 4,300 feet, 62 bbls. per hour.

Henderson County

Sparks and others No. 1 Berry, abandoned 100 feet, 5 miles south of Brownsboro.

Navarro County

Thompson & Sitton No. 2 Bush, Powell field, 1,171 feet, estimated 11,000,000 feet gas per day.

Titus County

B. G. Byars and others No. 1 Edwards, 4,301 feet, 50 bbls. per hour. Constantine Refining Co. No. 1 Leake, 4,354 feet, 377 bbls. per day on pump. G. M. W. Oil Co. No. 1 Talco townsite, 4,350 feet, 15 bbls. per hour, swabbing; No. 2-35 Talco townsite, 4,370 feet, 10 bbls. per hour on swab. Hollingsworth Drilling Co. No. 2 Morris, 4,164-4,367 feet, 35 bbls. per hour on swab. Howze Oil Corp. and others No. 1 Blackburn, 4,228-90 feet, 130 bbls. in 24 hours. Humble Oil & Refining Co. No. 2 Hughes, 4,318 feet, 306 bbls. in 24 hours, 1 per cent salt water; No. 1 Kirkpatrick, 4,361 feet, 187 bbls. in 24 hours through one-quarter inch choke. Magnolia Petroleum Co. No. 3 Carr, 4,335 feet, 15 bbls. per hour; No. 2 Mainard, 4,315 feet, 15 bbls. per hour. McCutchin No. 1 First National Bank, 150 bbls. in 24 hours.

EAST TEXAS COMPLETIONS

Gregg County

Burnett No. 1 State Land, 3,562-79 feet, 32 bbls. per hour. Deep Rock Oil Corp. No. 21 Jones, 3,592-3,637 feet, 20 bbls. in 15 minutes. F.H.E. Oil Co. No. 1 Christian, 3,625-65 feet, 20 bbls. in 30 minutes. Magnolia Petroleum Co. No. 17 Jones, 3,665-77 feet, 80 bbls. per hour. Monday Oil Co. No. 7-C Harris, 3,479-80 feet, 44 bbls. in 30 minutes. Selby Oil & Gas Co. No. 14 Snavely, 3,550-61 feet, 32 bbls. in 30 minutes. Sinclair Prairie Oil Co. No. 14-A Aiken, 3,573-3,610 feet, 30 bbls. in 15 minutes. Sun Oil Co. No. 35 Haynes, 3,636-61 feet, 30 bbls. in 50 minutes. Sun Oil Co. No. 15 Loden, 3,667-77 feet, 30 bbls. in 30 minutes. Tide Water Oil Co. No. 20 Davis, 3,532-75 feet, 11 bbls. in 10 minutes; No. 18 Nettleton, 3,451-63 feet, 10 bbls. in 10 minutes.

J. B. Beard No. 13 Elder, 3,508-45 feet, 3 bbls. per hour on swab. Central Commercial Oil Co. No. 7 King, 3,710-11 feet, 18 bbls. in 35 minutes. Jones and others No. 11 Crim, 3,701-02 feet, 10 bbls. per hour. Lacey No. 10 Reynold, 3,533-62 feet, 67 bbls. per hour. Mack No. 3 Dickey, 3,730-31 feet, 60 bbls. in 12 hours on pump, 60 per cent water. Quad Corp. No. 8-B Duncan, 3,612-16 feet, 350 bbls. in four hours. Shell Petroleum Corp. No. 6 Carr, 3,410-30 feet, 30 bbls. in 30 minutes. Sinclair Prairie Oil Co. No. 24 Lockhart, 3,653-65 feet, 35 bbls. in 30 minutes. Sun Oil Co. No. 48 Cole, 3,521-39 feet, 62 bbls. per hour; No. 3 Walker, 3,552-53 feet, 10 bbls. per hour through three-eighths inch choke.

Rusk County

Gulf Oil Corp. No. 31-C Christian, 3,704-16 feet, 40 bbls. per hour through three-eighths inch choke. Humble Oil & Refining Co. No. 43 Peterson, 3,583-94 feet, 22 bbls. in 18 minutes. Snowden & McSweeney No. 23 Laird, 3,612-28 feet, 68 bbls. in 30 minutes. Stanolind Oil & Gas Co. No. 5 Smith, 3,732-33 feet, 10 bbls. in three hours. Marcus & Wood No. 3 Gill, 3,623-24 feet, 25 bbls. in 30 minutes. Atlantic Refining Co. No. 12 Griffin, 3,624-3,723 feet, 48 bbls. per hour. Chicago Oil Co. No. 4 Alford, 3,570-94 feet, 30 bbls. per hour. Cockburn & Boase No. 9 Green, 3,807-08 feet, 25 bbls. in 30 minutes. DeArman No. 7 Crook, 3,560-98 feet, 123 bbls. in eight hours, swabbing.

Gulf Oil Corp. No. 14 Stone, 3,788-90 feet, 20 bbls. per hour. Humble Oil & Refining Co. No. 8 Holt, 3,765-3,814 feet, 20 bbls. in 20 minutes; No. 53-A Kangerga, 3,646-91 feet, 50 bbls. per hour; No. 32 Wooley, 3,675-76 feet, 20 bbls. in 20 minutes. Hunt Oil Co. No. 30-C Fair, 3,609-19 feet, 27 bbls. in nine minutes. Moss & Urchel No. 3 Griffin, 3,630-3,739 feet, 25 bbls. in one and one-half hours. Royal Petroleum Co. No. 6 Pinkston, 3,505-76 feet, 20 bbls. in three hours on pump. Texas-Canadian Oil Co. No. 6 Kersh, 3,637-38 feet, 20 bbls. in 30 minutes.

Smith County

Hunt Oil Co. No. 24-A Fair, 3,673-78 feet, 20 bbls. in nine minutes.

Upshur County

B. G. Barnett Petroleum Corp. No. 4-B Cannon, 3,643-47 feet, 30 bbls. in 30 minutes. P. H. Pewitt No. 2-B Sobey, 3,676-79 feet, 20 bbls. in 20 minutes Rutledge & Boller No. 16 Todd, 3,730-32 feet, 30 bbls. per hour through one-half inch choke. E. L. Smith No. 4 Cabinass, 3,626-27 feet, 20 bbls. in one and one-half hours on swab. Southland Drilling Co. No. 31 O'Byrne, 3,700-12 feet, 15 bbls. in 30 minutes. S. K. Vierson No. 5 Victory, 3,603-05 feet, 30 bbls. per hour.

Shreveport Geologists

The Shreveport Geological Society has resumed its weekly luncheon meetings, Fridays at the Caddo Hotel, extending an invitation to geologists and others interested.

North Louisiana, Arkansas

By MITCHELL TUCKER

RODESSA IS 18,000 BARRELS BELOW STATE ALLOWABLES

SHREVEPORT, La., Nov. 30.—With the addition of 12 new producers at Rodessa, the daily production for the past week averaged 78,469 bbls., a 2,789-bbl. increase over the daily average for the previous week, and an all-time peak for the field. Production is from 432 wells, 324 in Louisiana and 108 in Texas.

The field still exhibits approximately an 18,000-blb. deficiency from the allowable production of 225 bbls. per well per day. The per well average last week for the entire field was 182 bbls. The Louisiana wells average 175 bbls., and Texas wells 201 bbls.

United Gas Public Service Co. is installing pumping equipment at four of its wells: No. 1 Miller, No. 1 Cunningham, and Nos. 20 and 21 Rodessa Oil & Land, in sections 14 and 15-23-16, on the northern flank of the field. These wells have been flowing only by heads, and showing a deficiency in their daily production. It is not yet known whether it will be necessary to pump continuously or not, as perhaps the occasional agitation by intermittent pumping will stimulate the flowing production to the allowed figure.

About 75 oil men, representing both major companies and independents, attended the second Louisiana public hearing on the Rodessa field on November 27 in Baton Rouge, where recommendations were received by Governor Leche and officials of the Conservation Commission regarding future conservation measures at Rodessa. After introduction of testimony and recommendations, Governor Leche announced that the data would be carefully studied and an equitable order issued.

Production by Pool

Estimated daily gross production all companies week ending November 29:

NORTH LOUISIANA

Bellevue	695
Caddo light	3,850
Caddo heavy	2,650
Converse	855
Cotton Valley heavy	275
Cotton Valley light	545
De Soto and Red River	1,345
Elm Grove	345
Haynesville	3,140
Holly	145
Homer	2,580
Pleasant Hill	150
Rodessa	56,710
Sarepta-Carterville	435
Sligo	110
Urania	2,800
Zwolle	880
Total	77,510

SOUTH ARKANSAS

Champagnolle	1,980
El Dorado	2,100
Lisbon	290
Miller County	575
Nevada	840
Smackover light	2,140
Smackover heavy	17,750
Stephens	585
Urbana	1,560
Total	27,820

Texas side of Rodessa field—21,760 bbls. daily.

Progress of Outposts

Outpost tests on the northern flank of the field continue to be of greatest interest at Rodessa. Bay Oil Co. No. 1 Parker, SE cor. of the Greenhan Survey, Cass County, one-quarter mile west of Louisiana line, again perforated casing opposite the Hill sand at 6,017-28 feet with 21 shots, and swabbed the hole dry after recovering 60 bbls. of oil. At no time has the well flowed. Testing is being continued at total depth of 6,050 feet, plugged back from 6,116 feet.

J. Edward Jones No. 1 Sharp, SW SE section 4-23-16, about 2 miles northeast of the Parker well, and an equal distance north of proven production, was indicated as a producer. The 7-inch casing was set at 5,939 feet. Having an elevation of 229 feet, Hill sand (upper gas member of Lower Glen Rose series) was drilled from 5,819 to 5,950 feet, and the Gloyd from 5,950 to 6,035 feet, total depth. The well is flowing by heads, production ungauged, but showings indicate a commercial well. Casing pressure is 635 pounds. This extension test is located about one-half mile south of the Arkansas line and about three-quarters of a mile south of Haynes No. 1 Embree heirs, Miller County, Arkansas, which was completed as a dry hole at 6,614 feet. Its nearest production in the Rodessa field proper is about 1½ miles south, in the southwest corner of section 9-23-16.

The eastern edge outpost well, Idessa Oil Co. No. 1 D. K. Sumner, NW SW SE section 10-23-15, has not yet been completed. At a depth of 6,197 feet, after cementing 5-inch at 6,150 feet, the well was swabbed down 4,000 feet without appreciable oil showings, although no actual evidence of salt water was noted. Testing of this important extension well to the east, 1 mile from Ida, La., is being continued, while results are being withheld.

About three-quarters of a mile west of this eastern outpost test, Lion Oil Refining Co. No. 5 Wynn, on southern line of section 9-23-15, checked low until a point 3,450 feet where it cut back into the upthrow side of the fault, and indicated itself a producer. After cutting fault at 3,450 feet, massive anhydrite base was logged at 5,605 feet, Hill sand topped 5,745 feet, Gloyd sand 5,867 feet, Young sand 6,012 feet, saturation 6,018 feet. The 7-inch casing has been set at 6,012 feet, preparatory to testing.

Rodessa completions for the week follow:

Phillips Petroleum Co. No. 2 Rose McDonald, NW S half NE section 17-23-15, flowed 12 bbls. per hour through one-quarter inch tubing choke, tubing pressure 250 pounds, saturation topped at 6,034 feet, total depth 6,075 feet.

United Gas No. 5 Brewer Unit, SE SW NW section 21-23-16, flowed 22 bbls. per hour through three-eighths inch tubing choke, casing pressure 500 pounds, tubing pressure 400 pounds, total depth 5,990 feet.

Herman L. Brown No. 2 R. P. Willis, Robert Trammel Survey, Cass County, Texas, flowed 360 bbls. in 24 hours for initial test through one-quarter inch tubing choke, casing pressure 1,500 pounds, tubing pressure 1,250 pounds, saturation 5,995 feet, total depth 6,010 feet.

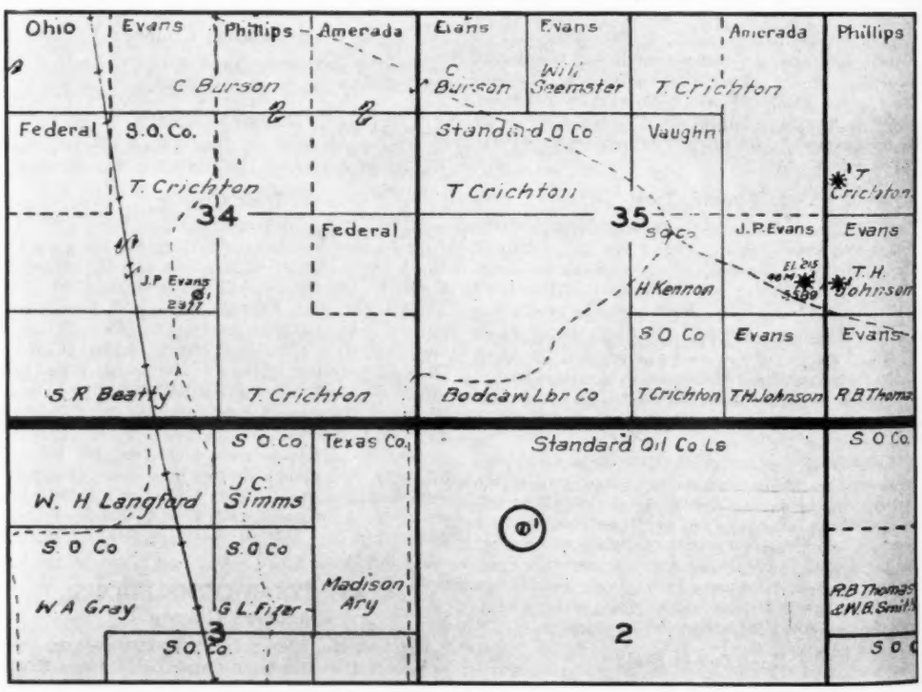
Magnolia Petroleum Co. No. 7 Rives, NE cor. John Collom Survey, flowed 405 bbls. in 24 hours, one-quarter inch tubing choke, casing pressure 500 pounds, tubing pressure 496 pounds, saturation topped 5,995 feet, total depth 6,040 feet.

Magnolia Petroleum Co. No. 9 Rives, John Collom Survey, flowed 8 bbls. per hour through three-sixteenths inch tubing choke, casing pressure 900 pounds, tubing pressure 450 pounds, saturation 5,978 feet, total depth 5,990 feet.

Ohio Oil Co. No. 4 R. P. Willis, S.F.I.W. Survey, flowed 426 bbls. initially in 24 hours through one-quarter inch tubing choke, casing pressure 850 pounds, saturation topped 5,938 feet, total depth 5,963 feet.

Phillips Petroleum Co. No. 3 T. H. and Sallie Stallcup, Robert Trammel Survey, flowed 363 bbls. in 24 hours through one-quarter inch tubing choke, casing pressure 1,800 pounds, tubing pressure 1,300 pounds, saturation 5,976 feet, total depth 6,150 feet.

United Production Co. No. 2 Bewley, H. Hol-



Standard Oil Co. of Louisiana's important Travis Peak test of Sibley area, C NW quarter, section 2-17n-9w, Webster Parish, 1 mile southwest of recently discovered gas-distillate pool in the Lower Glen Rose, now containing three prolific producers.—(Walter E. Wylie, Maps, Shreveport)

bert Survey, flowed 30 bbls. per hour through one-half inch tubing choke, casing pressure 400 pounds, tubing pressure 325 pounds, saturation topped at 5,954 feet, total depth 5,980 feet.

United Production Co. No. 2 Rambo Unit, Robert Trammel Survey, flowed 30 bbls. per hour through one-half inch tubing choke, casing pressure 400 pounds, tubing pressure 100 pounds, saturation topped 5,957 feet, total depth 6,010 feet.

United Production Co. No. 3 Rambo Unit, Robert Trammel Survey, flowed 32 bbls. per hour through one-half inch tubing choke, casing pressure 400 pounds, saturation topped 5,958 feet, total depth 6,011 feet.

United Production Co. No. 5 Rambo Unit, Robert Trammel Survey, flowed 32 bbls. per hour through one-half inch tubing choke, tubing pressure 525 pounds, casing pressure 160 pounds, saturation 5,979 feet, total depth 6,035 feet.

United Production Co. No. 3-A J. T. Wall, Alex Archer Survey, flowed 48 bbls. per hour through one-half inch tubing choke, casing pressure 750 pounds, tubing pressure 400 pounds, saturation topped 6,040 feet, total depth 6,085 feet.

Bienville Parish

DeSoto Oil & Gas Co. No. 1 Dunn and Olsen, C N half NW section 15-16-10, drilled massive anhydrite at 3,985 to 4,217 feet, and last stringer at 4,276-4,301 feet. Sand was cored in the Lower Glen Rose at from 4,429-44 feet; porous Oolitic lime 4,456-67 feet. Drill stem test from 4,200 to 4,480 feet showed 28 joints of salt water in one hour. The well is shut down for orders, total depth 4,480 feet.

Caddo Parish

F. A. Griffin of Shreveport continues to assemble leases west of Gilliam, all of which contain drilling clauses calling for a 6,200-foot test to begin on or before January 1, 1937.

Stanolind Oil & Gas Co. completed No. 113 Dillon heirs, NW SE section 14-21-15, pumping 18 bbls. daily after acidizing, total depth 1,715 feet. The rig is being moved to No. 114 Dillon heirs, SW SE NE of same section.

Claiborne Parish

United Gas and others No. 2 Durrett, SW cor. section 31-20-5, on the flank of the Sugar Creek gas field, after ten weeks unsuccessful fishing for drill pipe, set 7-inch casing at 5,480 feet, and drilled out plug to 5,703 feet. Liner was set on bottom, and the well washed in as a 20,000,000-foot gas well from the Lower Glen Rose, already proven producing zone at Sugar Creek. Announcement has not been made as to whether or not the well will be completed at this depth.

In E. T. Oakes No. 1 W. H. Patton, NE quarter section 1-20-5, after coring at 5,195-5,210 feet and 5,210-22 feet, the drill stem indicated only salt water. However, at 5,359-72 feet a dark oil-saturated core of Oolitic lime was reported recovered, which has prompted the owner to run casing and test. Seven-inch casing was formerly set at 5,007 feet.

Franklin Parish

Snyder & Sherrouse No. 1 Kimbee, wildcat test in SE SW section 36-12n-8e, reported a strong showing of gas and some oil at about 1,500 feet last week, probably in the Minden lime. Drilling is being resumed without thorough testing, and it is planned to run Schlumberger test after drilling the Claiborne-Wilcox contact section expected at about 2,750 feet.

Rapides Parish

James W. Miller of Alexandria is reported to have assembled a 6,000-acre block in the Bayou Rapides area west of Alexandria from about 25 property owners, giving as consideration a drilling clause providing for a 6,000-foot test to be begun before February 1, 1937, and to be located within 3 miles of leased farms.

Red River Parish

W. J. Hunter and others in No. 1 Long Bell Lumber Co., NE NE section 19-13-9, after being unable to get a shutoff around the casing, set at 3,696 feet, milled out of the casing by whipstocking at 3,500 feet, and are now arranging to recore and drill ahead. Old total depth was 3,737 feet. Good showings were reported in the original hole at 3,706-19 feet.

Morehouse-Union Parishes

Three routine gas well completions were made in the Monroe gas field last week, having an aggregate daily flow of 15,000,000 feet, average rock pressure 750 pounds.

Richland Parish

Gulf Refining Co. No. 15 R. R. Rhymes, section 32-17-6e, deep test of the old Richland gas field structure, set 7-inch casing at 8,040 feet last week, and continues drilling below 8,130 feet. The casing was set following decision to drill to 10,000 feet for a thorough test of the section.

Sabine Parish

The testing of heavy gas showings previously logged in the Lower Glen Rose of the Converse field in Cox & Whitehurst No. 1 Whitney Corp., NW NE section 8-9-13, has again been delayed after the drill pipe twisted off while washing and circulating to the bottom preparatory to setting 5-inch oil string. Preparations are being made to fish, total depth 5,503 feet. Major companies continue to seek protective acreage in this vicinity, and the Whitney test is regarded as a likely field opener in the Lower Glen Rose.

ARKANSAS

Nevada County

The newly developed production in Township 14, by Benedum-Trees Oil Co., has been designated as the Troy pool. This company has contracted for the sale of 35,000 bbls. production from Troy to the Berry Asphalt Co. of Waterloo, Ark.

Two new locations were made for immediate drilling in the Troy field this week. Benedum & Trees No. 1 Block, NE NE SE section 9-14-20, where derrick is being constructed; and John R.

(Continued on Page 77)

AMERICAN-BOSCH

Super POWERED MAGNETO

Engineered for The Oil Fields!

THE new American-Bosch Super-Powered Magneto understands the problems of the oil field like a book! It knows that "a barrel lost is lost forever." So it introduces performance features which insure uninterrupted dependability . . . features never before combined in a magneto priced for general industrial or commercial use.

In this Super-Powered Magneto: Greater electrical energy . . . reserve ignition power. *In this Super-Powered Magneto:* A new low speed limit for sure-fire starting . . . a top speed limit far above the requirements of any modern industrial or commercial engine. *In this Super-Powered Magneto:* Construction that is dust-proof, water-proof, winter-proof, tropic-proof. Yet the price tag is a genuine surprise.

Write for new folder. It describes how this American-Bosch Super-Powered Magneto minimizes maintenance costs, insures prompt service, prevents idle equipment, saves you time, worry and expense.

The makers of American-Bosch products have always taken pride in creating, designing, building and selling products superior to those commonly in use. Built to a high standard of quality, these products are proven leaders in their fields.

UNITED AMERICAN BOSCH CORP.
SPRINGFIELD, MASS. New York, Chicago, Detroit

Oklahoma Operations

By DAL DALRYMPLE

TWO MOORE POOL GUSHERS; SEVERAL NEARING PAY SAND

The Moore pool of Cleveland County provided the feature field news of the week in Oklahoma with two new gushers, a third well which was expected to attain rating as a gusher and several more that were about ready to test. The producing area was extended one-fourth mile southeast at Carter Oil Co. No. 1 James, SW NE SW section 27-10-2w. It flowed 366 bbls. of oil in 24 minutes after blowing out and cleaning itself. Gas gauged about 25,000,000 feet. Production was thought to be from Simpson dolomite and Wilcox sand horizons. It topper Wilcox sand at 7,295 feet and was bottomed in sand at 7,302 feet. It was shut in for tankage, and was due to be given a more extensive test early this week.

The second big Moore well of the week was Sinclair Prairie Oil Co. and others No. 1 Strauss, SW cor. section 22-10-2w, on the community block. It blew in with a roar that could be heard several miles after the crew had bailed down only 1,800 feet, when gas broke through and cleaned the hole. It flowed for 13 minutes and, although no gauge was taken, production estimates ranged from 18,000 to 25,000 bbls. daily, with gas volume estimated from 50,000,000 to 100,000,000 feet daily. It was shut in for larger connections and was to be tested for potential within the week. Total depth was 7,273 feet, in Wilcox sand topped at 7,242 feet.

Sinclair Prairie Oil Co. and others No. 1 Holmes, NE NE SE section 28-10-2w, was bottomed at 6,270 feet in Wilcox sand, and was preparing to bail after showing for good oil and gas production in the upper Simpson zone. Same operators' No. 2 Franklin, SE cor. section 21-10-2w, was drilling below 7,190 feet in Simpson dolomite, and three other wells were below 6,000 feet.

Skelly Oil Co. No. 1 Sporn, NW NE SW section 21-17-3e, which opened a new producing area in Lincoln County, was to be completed as a gas well. Production was estimated at about 75,000,000 feet. It had oil showing in the second sand, but lost packer and plugged back to first sand.

The Tillman County wildcat, Indian Territory Illuminating Oil Co. and Foster Minerals Corp. No 1 Hatler, SW SW NE section 32-2s-17w, set bottom-hole plug at 3,814 feet to shut off water and bailing and testing was to begin when cement sets. The wildcat showed as a pool opener on drill stem test last week.

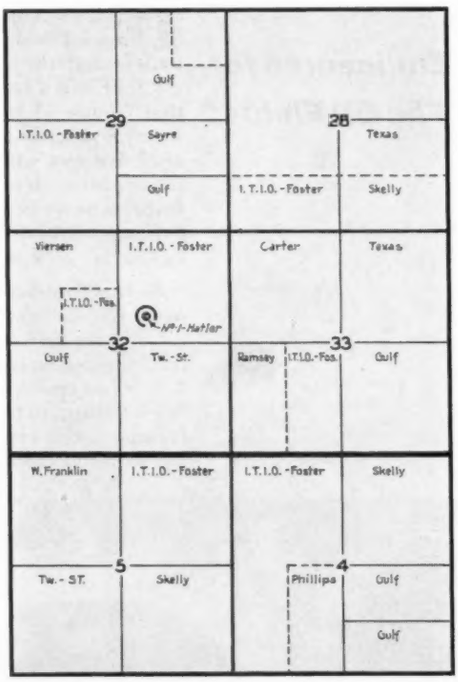
Pontotoc County

Three new oil wells were completed in the Fitts field, Pontotoc County, J. E. Crosbie, Inc., No. 1-B L. Burris, NE SW SE section 22-2n-7, topped Hunton at 3,578 feet; Sylvan shale, 3,951 feet; total depth, 3,952 feet. It was acidized with 10,000 gallons and flowed 691 bbls. in three and one-half hours through tubing and casing. Sinclair Prairie Oil Co. No. 4 Wooley "B," SW SE SW section 22-2-7, topped Viola lime at 3,955 feet; Bromide, 4,215 feet; total depth, 4,375 feet; acidized with 10,000 gallons and made potential of 2,420 bbls., after flowing 461 bbls. net in two hours. Carter Oil Co. No. 11 Harden, NW NE SW section 30-2-7, was acidized with 8,000 gallons and flowed 435 bbls. of oil in three hours through tubing. Top of Hunton lime was 3,273 feet; Sylvan shale, 3,558 feet; total depth, 3,563 feet. Amerada Petroleum Corp. No. 4 G. Smith, NW SE NW section 28-2-7, old well, was plugged back from 4,285 feet to 4,167 feet, acidized and flowed 976 bbls. of oil and 10 bbls. of water in 11 hours, recompleted.

In the Jesse area, Continental Oil Co. No. 4 Simpson, SE SW NE section 12-1-7, topped McLish at 4,455 feet; Wilcox sand, 4,712 feet; total depth, 4,720 feet. It flowed 1,114 bbls. of oil through casing in two hours. Same operator's No. 2 Munroe, SE SW NW section 12-1n-7, topped Viola lime at 4,042 feet; Bromide, 4,296 feet; McLish, 4,588 feet; total depth, 4,793 feet, where water intruded; plugged back to 4,752 feet. It flowed 126 bbls. of oil in 15 hours, completed.

Mexhoma Oil Co. No. 1-A Butler, NE SE NE section 21-5-8, was dry and abandoned at 1,210 feet, total depth.

The following new work was reported in Pontotoc County: Vaughn and Senora Oil & Gas Co. No. 1 Burke, NW SW NW section 33-5-5, location; H. & M. Drilling Co. No. 5 Busby, NE NE SW SE section 20-5-8, total depth 670 feet, setting 8-inch casing; Louisiana Oil & Refining Co. No. 2 Perry, SE NE NW section 20-5-8, location; Sandback No. 1 Norris, SW SE SW section 28-4-6, location; W. A. Delaney and Boettcher Oil & Gas Co. No. 2 Alexander, SW NE SW section 24-4-7, wildcat, moving in tools; Ramsey Petroleum Co. No. 1 Johnson, NW SW SE section 9-3-7, rig; E. H. Moore and others No. 10 Akers, SE NW NE section 36-2-6, location; same operators' No. 5-A Moody, SE NE SE section 22-2-7, cellar; Sinclair Prairie Oil Co. No. 11 Woolley, NW SW SW section 22-2-7, cellar; E. H. Moore and others No. 1 L. Ackley, SW NW SE section 23-2-7, location; Skelly Oil Co. No. 1 Ingram, NW NW SW section 23-2-7, cellar; same operator's No. 5 Metropolitan Life, SW NE SW section 23-2-7, building rig; same operator's No. 6 Metropolitan Life, SE SE SW section 23-2-7, building rig; Phillips Petroleum Co. No. 3 Bates, SW NE NW section 26-2-7, cellar; same operator's No. 4 Bates, NW NE NW section 26-2-7, digging cellar; Simpson Fell Oil Co. No. 5-A Westheimer, NW SW NW section 26-2-7, digging cellar; same operator's No. 6 Westheimer, NE SW NW section 26-2-7, cellar; Skelly Oil Co. No. 17 Park College, SE SW NE section 28-2-7, rig; J. E. Crosbie, Inc., No. 4 A. S. Harden, NW NE NE section 30-2-7, cellar.



Indian Territory Illuminating Oil Co. and Foster Minerals Corp. No. 1 Hatler, section 32-2s-17w, probable pool opener in Tillman County, Oklahoma, was due to test this week.—(Mid-Continent Map Co., Tulsa)

Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending November 28, and for the preceding week, was as follows:

	Barrels	
	Nov. 28	Nov. 21
Allen	8,000	7,975
Burbank	8,000	7,850
South Burbank	15,125	15,150
Balance Osage	21,150	21,500
Blackwell district	5,225	5,575
Bristow-Slick	8,050	8,075
Chandler	3,800	3,850
Crescent	9,050	8,750
Cromwell	3,300	3,300
Cushing-Shamrock	10,300	10,400
Duncan district	3,975	4,050
Edmond	11,375	14,900
Fish	7,350	7,525
Fitts	63,875	65,325
Gray	1,400	1,350
Graham	5,100	4,750
Healdton	9,850	9,575
Hewitt	4,600	4,425
Holdenville	1,000	975
Keokuk	8,650	8,850
Konawa	1,775	1,725
Lucien	12,500	12,750
Marshall-Lovell	675	575
Oklahoma City	143,475	162,275
Olympic	11,225	11,500
Papoose	975	975
Polo	2,250	2,225
Sasakwa and townsite	3,250	3,250
Sholem-Alechem	3,350	3,350
Seminole:		
Howlegs	11,750	11,900
Carr City	5,925	5,775
Earlsboro	6,425	6,450
South Earlsboro	750	775
East Earlsboro	8,850	8,975
Little River	12,050	12,400
East Little River	1,125	1,100
Maud	825	800
Mission	2,375	2,325
Seminole	9,825	9,925
East Seminole	4,225	4,350
Searight	5,400	5,250
Total Seminole	69,525	70,025
St. Louis-Pearson	23,325	23,700
Tatums	3,600	3,300
Tonkawa-Garber-Thomas	5,625	5,450
Wewoka	3,950	3,950
Yale-Jennings	4,025	4,125
Other pools	69,425	70,100
Total Oklahoma	568,125	593,425

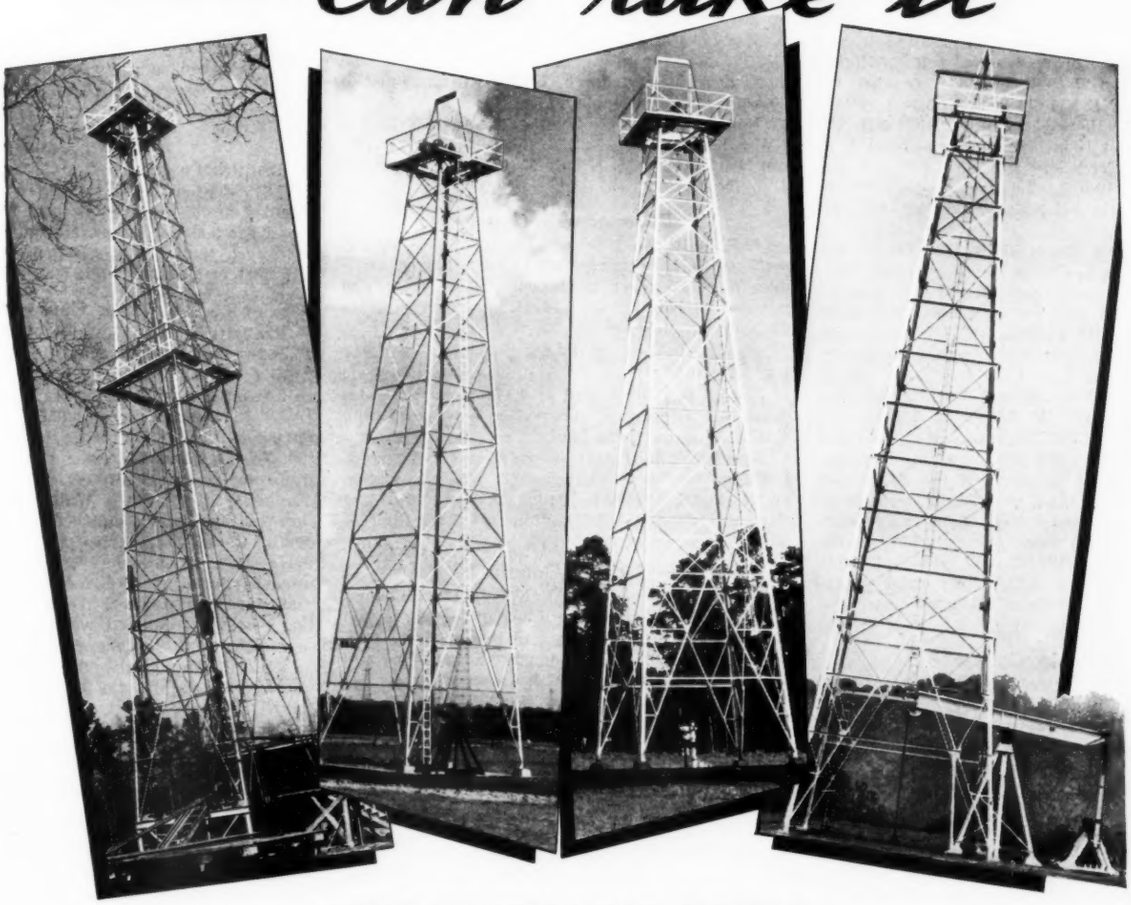
Near Completions

Mid-Continent Petroleum Corp. No. 1 Statler, SE SE SW section 2-1n-7, total depth 4,655 feet; was acidized with 6,000 gallons, and potential was estimated at 870 bbls. of oil, but it was not completed. Amerada Petroleum Corp. No. 3 Woolley, NE SE SE section 21-2-7, was acidized with 10,000 gallons and flowed 480 bbls. of oil gross in one hour from total depth of 4,374 feet. Phillips Petroleum Co. No. 1 Bates, SW NE NW section 26-2-7, flowed 200 bbls. of oil in three hours through tubing; was acidized with 10,000 gallons and flowed 564 bbls. of oil in one hour through casing. Simpson Fell Oil Co. No. 4-A Westheimer, NE SE NE section 27-2-7, total depth 3,648 feet; was acidized with 10,000 gallons and flowed 126 bbls. of oil gross in 13 minutes. E. H. Moore and others No. 1-A Craddock, NW NW SW section 29-2-7, at total depth of 3,595 feet, was acidized with 6,000 gallons and flowed 230 bbls. of oil gross in two hours. Same operators' No. 4-A Smith, NE NE NW section 31-2-7, topped Wilcox sand at 4,445 feet, total depth, and flowed 1,100 bbls. of oil in four hours while running tubing. Magnolia Petroleum Co. No. 7 D. Harden, SW NW NE section 30-2-7, total depth 3,820 feet; was acidized with

From Every Angle

M.I.W. STEEL DERRICKS

—"can take it"



WRITE FOR NEW M.I.W. CATALOG

MUSKOGEE IRON WORKS

STEEL DERRICKS SUBSTRUCTURES ENGINE BASES FRAMING SILLS

RIG FRONTS — SKID-TYPE HOISTS

1802 Esperson Bldg. Houston, Texas | Gulf States Bldg. Dallas, Texas | Main Office and Plant Muskogee, Oklahoma | Thompson Bldg. Tulsa, Oklahoma | Kilgore, Texas

5,000 gallons and flowed 343 bbls. of oil gross in one hour.

Okfuskee County

Five new oil wells were completed in Okfuskee County. J. A. Chapman No. 4 Cudjo, SW SW SE section 25-10-8, topped Senora sand at 1,725 feet; total depth, 1,754 feet; flowed 105 bbls. of oil in the first two hours. Sinclair Prairie Oil Co. No. 1 S. Fisher, NE NE SW section 19-10-9, pumped 35 bbls. in 24 hours, after topping Senora sand at 1,808 feet, drilling to 1,819 feet, total depth and shooting. J. A. Chapman No. 3 Peter King "B," NW SW SW section 30-10-9, topped Senora sand at 1,708 feet; total depth, 1,737 feet; shot with 80 quarts and flowed 70 bbls. of oil in 24 hours. Gulf Oil Corp. No. 8 Cohee, NE NW NW section 31-10-9, was shot with 60 quarts and flowed 206 bbls. of oil in 24 hours from Senora sand, topped at 1,726 feet; total depth, 1,781 feet. Steckoll & Durkee No. 7 Johnson, NE NW SE section 2-10-11, had sand at 1,674-78 feet, total depth, and flowed 108 bbls. of oil in the first 24 hours.

Phillips Petroleum Co. No. 1 Wigton, NW SW section 20-10-9, was dry and abandoned at 1,826 feet, total depth. Champlin Refining Co. No. 1-A Thompson, SW SW NW section 7-13-8, was dry and abandoned at 4,100 feet, total depth.

New work in Okfuskee County: J. A. Chapman & McFarlin No. 2 Bunner, NE NW SE section 25-10-8, set 10-inch casing at 40 feet; J. A. Chapman No. 8 Cudjo, NW SW SE section 25-10-8, drilling at 1,080 feet; same operator's No. 1 K. Williams, SE SE SW section 25-10-8, spudded; Manahan Oil Co. No. 3 Black, NE NE SE section 25-10-8, cellar; Earl Evans and others No. 1 Smith, NE NE NW section 36-10-8, set 10-inch casing at 38 feet; J. A. Chapman No. 6 Peter King "B," NE SW SW section 30-10-9, set 10-inch casing at 40 feet; W. B. Wells No. 3 Clark, SE NE NW section 11-10-11, spudded.

Manahan Oil Co. No. 2 Black, SW NE SE section 25-10-8, topped Senora sand at 1,743 feet; total depth, 1,780 feet; and flowed 540 bbls. of oil in 24 hours but was not completed. Blackwell Oil & Gas Co. No. 11 DoHan, SE NW NE section 36-10-8, was testing after shooting with 30 quarts. It topped Senora sand at 1,710 feet; total depth, 1,739 feet. J. A. Chapman and Atlantic Refining Co. No. 3 Natchee, NE NW SE section 19-10-9, had Senora sand at 1,722-92 feet; was shot, had 700 feet of oil in the hole, and was preparing to pump. Same operators' No. 4 Natchee, NW SW SE section 19-10-9, had Senora sand at 1,721-92 feet; total depth, 1,806 feet; bailed 4 bbls. of oil in 24 hours and was preparing to shoot. Sinclair Prairie Oil Co. No. 6 Carolina, SW NE SW section 31-10-9, topped Senora sand at 1,757 feet; total depth, 1,774 feet; swabbed 27 bbls. of oil in six hours and was preparing to pump.

Seminole County

Amerada Petroleum Corp. and others No. 1 Tillman, NE NE NW section 2-10-5, Seminole County, pumped 536 bbls. of oil in 19 hours and was completed at 4,641 feet, total depth. Production was from Wilcox sand, topped at 4,637 feet. Commercial Drilling Co. No. 1 Toche, SE cor. section 8-9-7, topped Cromwell sand at 3,455 feet, and was completed at 3,482½ feet, total depth. It flowed 165 bbls. of oil in 24 hours. Vierson and others No. 7 Jones "A," SE NW NW section 11-6-6, produced 3,500,000 feet of gas and was completed at 2,405 feet, total depth.

Amerada Petroleum Corp. and others No. 1 M. Davis, SW SW NE section 3-10-5, topped Hunton lime at 4,422 feet; total depth, 4,425 feet; flowed 81 bbls. of oil through choke in 24 hours and was completed.

Hayes Drilling Co. No. 1-A Youngblood, NE NW NE section 19-9-8, was dry and abandoned at 2,678 feet, total depth. Vierson and others No. 1 Strother, NW SE SE section 24-7-6, was dry and abandoned at 3,260 feet, total depth. Sinclair Prairie Oil Co. No. 4 Cully, NW NE NW section 13-5-7, was dry and abandoned at 4,370 feet, total depth.

Wood Oil Co. No. 2 Ashby, SE NE NW section 22-7-5, was acidized with 1,000 gallons and swabbed 148 bbls. of oil net in 24 hours; reacidized with 2,000 gallons, it swabbed 134 bbls. of oil net in 24 hours. Deep Rock Oil Corp. No. 7 Hagler, NW NW NE section 19-9-7, topped Gilcrease sand at 3,437 feet; total depth, 3,444 feet; and flowed 115 bbls. of oil in 24 hours through tubing. Creekmore & Wolf, Inc., No. 2 Campbell, NW cor. section 20-9-7, topped Wilcox sand at 4,262 feet; total depth, 4,276 feet; plugged back and perforated casing in Hunton lime, topped at 4,001 feet; acidized and flowed 170 bbls. of oil net in 10 hours.

The following new work was reported in Seminole County: Magnolia Petroleum Co. No. 5 Browning, C W half SW NW section 14-10-6, old well, rigging up to deepen; Murphy Oil Co. No. 1 Mayhue, NE NW NW section 14-9-6, old well, to deepen to Wilcox sand; L. W. Prunty No. 2 Boring, NE NE SE section 17-9-7, drilling at 1,305 feet.

Osage County

Three new oil wells were completed in Osage County. Grimes-Gillespie No. 16 Osage, NW SE SE section 31-21-12, had Bartlesville sand at 1,452-89 feet, total depth, was shot with 30 quarts and pumped 25 bbls. of oil in 24 hours. Continental Oil Co. No. 14 Lessert, SW SE SE section 21-24-7, topped Bartlesville sand at 2,582 feet; total depth, 2,672 feet in sand; was shot with 80 quarts and flowed and swabbed 129 bbls. of oil in 24 hours. Spartan Investment Corp. No. 7 Osage, NW NE SE section 35-25-9, topped Bartlesville sand at 2,124 feet; Burgess sand, 2,224 feet; total depth, 2,347 feet in lime; plugged back to 2,157 feet; shot with 60 quarts and pumped 3 bbls. of oil and 15 bbls. of water. Production was from Bartlesville sand.

Bay Oil Corp. No. 1 Osage, SE SW NW section 25-22-7, an old well, was deepened to Siliceous lime at 2,929 feet; total depth, 2,969 feet; and pumped 50 bbls. of oil, recompleted.

New work in Osage County: George Th. Tselos, NW SE NW section 5-23-11, location; Gray & Tolson No. 11 Osage, C N half N half SW section 27-21-9, location.

Pottawatomie County

J. F. Smith No. 1 Brandenburg "C," SW SW SE section 34-8-4, Pottawatomie County, topped Dolomite at 4,135 feet; total depth, 4,167 feet; and pumped 40 bbls. of oil and 15 per cent water in 24 hours, completed.

Sinclair Prairie Oil Co. No. 5 Gammon, SW SW NW section 30-7-5, an old well, was deepened from 4,278 feet to Wilcox sand at 4,414 feet; new total depth, 4,420 feet; and pumped 10 bbls. of oil and 5 bbls. of water in 24 hours.

New work in Pottawatomie County: Reynolds Drilling Co. No. 1 Shubert, SE SW NE section 29-7-4, location; Paul Traugh and others No. 1 Tarman, NW SW NW section 29-6-5, drilling at 2,150 feet.

Lincoln County

Magnolia Petroleum Co. No. 7 Ross Wagner, NW SE SE section 2-14-3e, Lincoln County, topped Skinner sand at 4,212 feet; drilled to 4,247 feet, total depth; shot with 20 quarts and swabbed and flowed 250 bbls. of oil in 24 hours, completed.

H. F. Wilcox Oil & Gas Co. No. 3 Sac & Fox Indian Agency, NE NE SW section 15-14-6, was drilling at 1,690 feet.

Hilton Phillips No. 2 Graham, NW SW NW section 2-14-3e, topped Bartlesville sand at 4,363 feet; total depth, 4,391 feet. It was shot with 20 quarts; swabbed 85 bbls. of oil in 24 hours, 68 bbls. in the next 24 hours and was cleaning out.

Pawnee County

Wood Oil Co. No. 1-A Mann, NW SW SW section 23-20-7, Pawnee County, had Wilcox sand at 2,871-3,030 feet; hole full of water at 2,894 feet; Siliceous lime, 3,128 feet, and was dry and abandoned at 3,260 feet, total depth.

Okmulgee County

Reneau and others No. 3 Field, SW SE NW section 16-14-11, Okmulgee County, had Dutcher sand at 2,421-50 feet, total depth, shot with 20 quarts, flowed 75 bbls. of oil in 24 hours and was completed.

Oklahoma County

Helmerich & Payne No. 1 Diamond, SW SW SE section 15-12-3w, Oklahoma City field, Oklahoma County, an old well, was deepened from 6,441 feet to 6,478 feet, and flowed 50 bbls. of oil in 24 hours, recompleted.

New work in Oklahoma County: Champlin Refining Co. No. 2 Slattery, Block 3, Northview Addition, NW NW SE section 15-12-3w, digging cellar and pits and moving in; Big Chief Drilling Co. No. 1 State, NW SW NE SE section 27-12-3w, rigging up rotary.

McIntosh County

Stanolind Oil & Gas Co. and Ramsey Oil Co. No. 1 S. Tiger, NW NW SW section 13-9-15, McIntosh County wildcat, was dry and abandoned at 4,993 feet, total depth. It topped Gilcrease sand at 3,445 feet; Wapanucka, 4,560 feet; Union Valley, 4,913 feet; Cromwell sand, 4,928 feet.

Hughes County

The only well completed in Hughes County was Manahan Oil Co. No. 5 Dixon "C," NW NE NE section 12-9-8, Olympic area. It topped Senora sand at 1,711 feet; total depth, 1,745 feet; shot with 60 quarts and pumped 108 bbls. of oil in 24 hours.

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp. No. 3 McCaughtry, NE SE NE section 21-23-2w, Billings area, Noble County, topped Wilcox sand at 4,228 feet; total depth, 4,256 feet. It produced 75 bbls. of oil in two and one-half hours and 100,000,000 feet of gas and was completed.

Logan County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Johnson "C," NW NW SE section 20-18-4w, Logan County, topped second Wilcox sand at 6,133 feet; based it at 6,273 feet; was bottomed at 6,436 feet; plugged back and redrilled to 6,108 feet; plugged back to 5,897 feet, was unable to eliminate water and was dry and abandoned.

Pittsburg County

Utilities Production Corp. No. 2 Bascom, NW SE SE section 10-7-18, Quinton area, Pittsburg County, an old well, was deepened from 1,849 feet; based sand at 2,019 feet, and was recompleted at 2,022 feet, total depth. Production increased from 9,100,000 feet of gas to 18,500,000 feet of gas.

Carter County

Skelly Oil Co. No. 7 Moore, SE NW NW section 17-2s-2w, Carter County, had sand series at 1,725-2,075 feet; total depth, 2,590 feet; plugged back to 2,080 feet and completed. It flowed 131 bbls. of oil in 24 hours, with 12,500,000 feet of gas. Samedan Oil Co. No. 14 Higgins, NW SW NE section 7-2s-2w, flowed 70 bbls. of oil in 24 hours and was completed at 2,507 feet, total depth.

Skelly Oil Co. No. 1 Walker, NE NW SW section 9-2s-2w, was abandoned at 2,710 feet, total depth. Carter Oil Co. No. 1 J. Perkins, NW NW SE section 4-1s-3w, had sands showing oil but was abandoned at 2,805 feet, total depth.

Cox & Hamon No. 2 Wesley, NW SW SW section 3-4s-3w, an old well, was cleaned out but failed to produce and was abandoned.

The following new work was reported in Carter County: Mudge Oil Co. No. 1 B. F. Lundy, NW NE SW SE section 19-1s-2w, drilling with machine at 420 feet; Cox & Hamon No. 29 Wesley, NW SW SW section 3-4s-3w, spudded; Roy M. Johnson No. 16 Davis, SW SE NW section 6-4s-3w, location; same operator's No. 17 Davis, NW NE SW section 6-4s-3w, machine.

Stephens County

Three small oil wells were completed in Stephens County. George Pace and others No. 12 Payne, NE NW NW section 28-2s-7w, had sand at 1,697-1,704 feet; total depth, 1,707 feet; and pumped 35 bbls. of oil and 10 bbls. of water in 24 hours. Gulf Oil Corp. No. 2 Anderson, SE NW NW section 15-3s-5w, had sand at 1,457-87 feet, total depth, and pumped 32 bbls. of oil, with 2 per cent water, in 24 hours. McCallester and others No. 3 Trout, SW NW SW section 1-2s-8w, had sand at 1,425-38 feet; total depth, 1,460 feet, and pumped 15 bbls. of oil in 24 hours.

The Texas Co. No. 4 Tomlin, NW SW NE NW section 15-3s-5w, was dry and abandoned at 1,484 feet, total depth.

Jackson County

Gulf Oil Corp. No. 5 Shirley, SW NW NE section 6-1s-19w, Jackson County, had lime at 2,602-13 feet, total depth, completed. It was acidized with 1,000 gallons and swabbed 25 bbls. of oil, with 250 bbls. of water, in 24 hours through tubing.

California Field Report

By
L. P. STOCKMAN

VENTURA AVENUE EXTENDED; ALLOWABLE PRODUCTION UP

LOS ANGELES, Calif., Nov. 30.—After having remained pegged at 544,000 bbls. per day for several months, California's December crude oil quota was increased to 551,000 bbls. daily when the Central Committee of California Oil Operators at its last meeting approved the allocation committee's recommended 7,000-bbl. increase over the 544,000-bbl. quota which had been in effect since last spring. The new quota compares with 553,000 bbls. daily recommended by the U. S. Bureau of Mines. The latter was based on anticipated consumptive demand for the final month of the year. Two objectives were sought by the increase, closer alignment with the Bureau of Mines figures averaged throughout the year and more efficient curtailment.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	November 15		November 8			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Diesel and gas oil	79,885	11,412	.....	.....	231,426	639,387
Gasoline	.....	.....	79,746	11,392	5,375,252	6,554,538
Kerosene	.....	.....	160,240	22,891	1,128,397	830,445
Foreign exports:						
Crude oil	168,545	24,078	51,865	7,409	8,353,863	11,598,274
Fuel oil	119,005	17,001	209,473	29,925	9,328,415	10,865,855
Diesel and gas oil	43,997	6,285	86,803	12,400	5,044,997	4,080,566
Gasoline	256,205	36,601	292,752	41,822	6,931,423	6,182,491
Kerosene	6,487	927	19,312	2,759	1,353,369	1,137,169
Other unfinished oil	58,959	8,423	.....	.....	214,212	99,847
Coastwise-domestic:						
Crude oil	207,918	29,703	259,873	37,125	6,497,118	6,144,005
Fuel oil	207,608	29,658	369,046	52,721	9,540,937	8,324,943
Diesel and gas oil	5,549	793	54,240	7,749	1,042,642	1,070,832
Gasoline	286,497	40,928	386,310	55,187	11,206,220	10,101,662
Kerosene	.....	.....	10,124	1,446	159,088	166,209

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	76,131	10,876	.....	.....	218,603	158,152
Gasoline	.....	.....	.....	.....	285,959	.....
Kerosene	.....	.....	.....	.....	.....	149,715
Asphalt	.....	.....	.....	.....	327,418	484,597
Lubricants	.....	.....	.....	.....	43,543	60,320
Foreign exports:						
Crude oil	119,697	17,100	.....	.....	2,979,568	2,376,008
Fuel oil	49,196	7,028	18,637	2,662	2,354,929	2,083,892
Diesel and gas oil	122,478	17,497	.....	.....	1,849,928	915,307
Gasoline	233,587	33,370	.....	.....	3,618,595	2,563,189
Kerosene	36,520	5,217	.....	.....	607,543	635,201
Lubricants	39,227	5,604	.....	.....	362,367	173,507
Other unfinished oil	.....	.....	.....	.....	90,923	.....
Coastwise-domestic:						
Fuel oil	35,108	5,015	228,951	32,707	5,823,424	6,169,885
Diesel and gas oil	.....	.....	36,212	5,173	615,988	215,294
Gasoline	273,517	39,074	121,497	17,357	4,785,741	3,899,380
Kerosene	.....	.....	28,460	4,066	203,744	88,113

Ventura Avenue

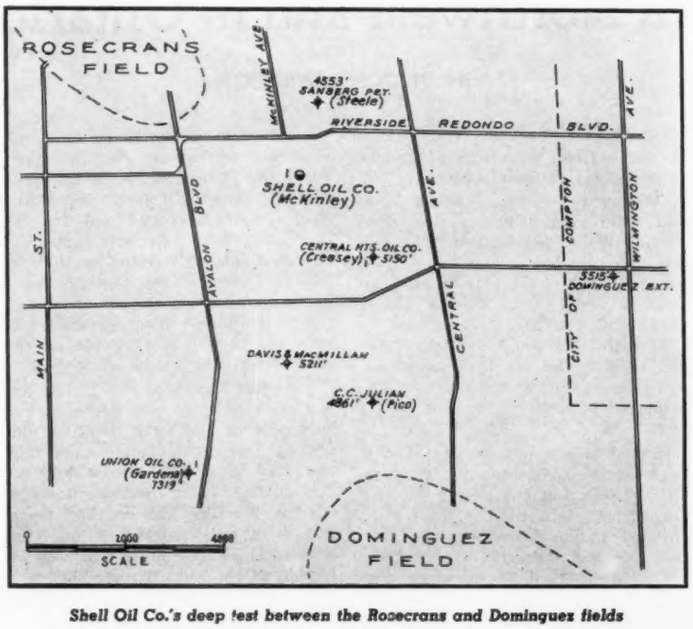
Associated Oil Co. extended the productive limits of the prolific Ventura Avenue field approximately 500 feet southeasterly a few days ago by completing No. 30 Ventura Land & Water flowing 912 bbls. of relatively clean 29.2 gravity oil and 798,000 feet of gas per day. The hole is open only 5 feet below the shoe of the 9-inch water string landed at 6,867 feet and the well is flowing a formation tester. Drilling was concluded at 6,872 feet and back pressure is being maintained by the use of a 1-inch bean. None of the several wells being carried to the deep 57 zone in this field are scheduled for immediate completion, although one or two should be tanking oil before the close of another 30 days. In the extreme western end of the Ventura Avenue field, Shell Oil Co. is being delayed in No. 88 Taylor due to mechanical trouble at 7,391 feet. The crew has practically given up the attempt to fish out the lost drill pipe and preparations are under way to sidetrack.

Continental Oil Co. spudded in No. 6 Grubb in the eastern end of the San Miguelito field of Ventura County one location east of No. 5 Grubb, completed several months ago flowing 1,490 bbls. of 32.3 gravity oil and 7,930,000 feet of gas per day from 7,040 feet, will be watched with considerable interest because of the possibility that Nos. 5 and 6 may be outposts in the western end of the Ventura Avenue field instead of eastern outposts in the San Miguelito field. No. 5 is exactly 6,000 feet west of Shell's No. 88 Taylor, which is located in the extreme western end of the Ventura Avenue field. In the Red Mountain district of Ventura County, Continental Oil Co. is rotating ahead in No. 1 Casitas in a hard sand at 2,250 feet. In the Elwood field of Santa Barbara County, Signal Oil & Gas Co. No. 8 on tideland permit No. 98 has showed a consistent increase in production since completion and is flowing 996 bbls. of 35.2 gravity oil per day from 3,871 feet. This is one of the largest producers completed in the Elwood field for some time and the oil is practically clean as it is cutting less than 1 per cent at the present time. Barnsdall and Rio Grande, which are jointly developing holdings in the Elwood field of Santa Barbara County, have plugged back No. 12 Luton Bell from 8,506 feet to 6,000 feet but production of the well has been somewhat disappointing as it is only flowing 50 bbls. of 34.3 gravity oil and 1,090,000 feet of gas per day. Tubing pressure of 1,725 pounds and casing pressure of 2,250 pounds indicates, however, that production could be stepped up somewhat through the use of a larger flow bean.

Santa Maria

A. N. Macrate No. 1 Rice, in the Santa Maria Valley field of Santa Barbara County, although a commercial producer, failed to equal the initial daily production of the last several wells finished in this field as it was good for only 124 bbls. of 18.2 gravity oil per day on the beam from 2,554 feet. No. 1 Rice logged the top of the Monterey at 2,335 feet and hit the top of the Franciscan Schist at 2,523 feet. The productive oil zone was logged between 2,412 feet and 2,519 feet and the company finished the hole with a 6⅝-inch liner including perforations at 2,335-2,520 feet. The R. R. Bush Oil Co., which is drilling No. 1 California Lands in conjunction with Hancock Oil Co., has reached a depth of 4,590 feet, but has not yet topped the Franciscan. The last core taken shows a dip in the structure approximately 60 degrees and concern is being felt as to the future production possibilities of this well. Union Oil Co. is coring ahead in the Monterey in No. 1 Vincent at 3,630 feet and may prove to be a relatively large well. Drilling operations in the Santa Maria Valley field have shown a consistent increase during the past 60 days and should show a further gain, although most of the potentially productive acreage in this district is held in relatively large blocks.

In the Padre Canyon district of Ventura County, Continental Oil Co., after unsuccessful swabbing operations, has completed No. 2 Hobson flowing 298 bbls. of clean 29.4 gravity oil per day on a compressor from 5,759 feet. This well, unlike Continental's initial completion in the Padre Canyon field, would not flow and it was found necessary to rig up a compressor. The Padre Canyon field and San Miguelito field, between the Ventura Avenue and Rincon fields, are two areas in the state on which there is no unanimity of opinion with respect to faulting and the amount of possibly productive acreage. These two fields are so badly broken up because of faulting and cross-faulting that it is almost impossible to find sufficient surface evidence indicating the existence of structure. In the Piru district of Ventura County, Rennie Brothers completed No. 1 in section 21-4-21, but this new well was good for only 10 bbls. of 19.6 gravity oil per day on the beam from 1,040 feet. The Texas Co. No. 131 Shiells in the Shiells Canyon district of Ventura County, died during the early part of the week and the crew is washing out perforations in an effort to stimulate production and permit recompletion of the well. High up on the hills of the Coldwater anticline in the Sespe district of Ventura County, Merchants' Petroleum Co. is drilling ahead in No. 7 Cochran at 285 feet. This well is expected to be completed in April or May of next year and, although production is expected to be developed at a relatively shallow depth, numerous obstacles will present themselves before drilling operations are finally concluded. The well is being drilled with cable tools on an 8-hour day shift and due



Shell Oil Co.'s deep test between the Rosecrans and Dominguez fields

to the rough terrain material and equipment has to be hauled up a steep tramway.

Wilmington

General Petroleum's inability to develop commercial production of light gravity refining crude oil on top of the Schist in the Wilmington district of Los Angeles Basin and the fact that the company has started preparations to complete No. 1 Patton in the shallow zone tends to indicate that the deep horizon which the company tested out at 6,814 feet in No. 1 Terminal does not present production possibilities. No. 1 Terminal produced a small quantity of 27.0 gravity oil but the hole has subsequently been plugged back to 5,091 feet and present plans call for a series of tests to be made higher up in the hole after perforating the 6⅝-inch, which was cemented through perforations during the course of work at 5,285 feet. The Sunset Oil Co. succeeded in completing its No. 2 Lupie in this field a few days ago and this new well was brought in pumping 101 bbls. of 15.2 gravity oil per day from 3,559 feet. The hole was finished with an 8⅝-inch water string landed at 3,291 feet and 290 feet of 6⅝-inch liner which included 268 feet of perforated. Gauthier Oil Co., which recently completed its initial well in the Wilmington district, has started rig construction for No. 2 and an early spud is anticipated. The Wilmington district has alternately looked promising and disappointing and as a consequence operators have been somewhat hesitant in prosecuting exploration work. Leasing activities, on the other hand, have been rather brisk during the past 30 days and this indicates the probability that several additional wells will be started within another 30 days. The outlook at the present time is favorable for completion of small producers with initials approximating 150 bbls. of heavy crude oil daily.

In the Playa Del Rey field of Los Angeles Basin, Union Oil Co. No. 7 Vidor, bottomed at 6,318 feet and finished with a 6⅝-inch water string landed at 6,276 feet and a 4¾-inch liner including 42 feet of perforated, has been completed pumping 101 bbls. of 22.3 gravity oil per day. This is the smallest well completed in this field by the Union Oil Co. in several months and the small production secured is the result of depletion and a less favorable location structurally than other recent completions of the company. Superior Oil Co. No. 1 Inglewood Extension has proven one of the surprise wells of Los Angeles Basin due to its failure to encounter the Schist as the bit in this well was rotating ahead a few days ago at 8,810 feet. Schist is encountered in the Playa Del Rey field at approximately 6,300 feet and it was thought probable therefore that Superior Oil Co. No. 1 Inglewood Extension would hit the top of the Schist not lower than 8,000 feet as the well is located approximately 7,000 feet from producing wells in the Playa Del Rey field. No indications of outstanding importance have been logged by the Superior up to the present time but the company has decided to continue drilling indefinitely in the hope that a productive Conglomerate might be encountered on top of the Schist as is the case in the Playa Del Rey field. The Sharby Oil Co., which is drilling an offset to the Eastern Oil Co. No. 1 D.R.L.&W. in the Playa Del Rey area, has just passed the 7,000-foot level and is consequently approaching the depth at which the top of the oil showings logged in the Eastern Oil Co. test. No. 1 Michel of the Sharby Oil Co. will be watched with considerable interest during the next few weeks as this well should definitely determine the importance of the showings found but proven unproductive in the Eastern Oil Co. No. 1 D.R.L.&W.

Round Mountain

Shell Oil Co. added an excellent new well to its list of producers in the Round Mountain field of Kern County by completing No. 16 Caldwell pumping 672 bbls. of 15.4 gravity oil per day from 1,505 feet after finishing the hole with a 6⅝-inch liner carrying 78 feet of perforated. Just previously Shell completed No. 1-7 Olcese pumping 131 bbls. of 15.3 gravity oil per day from 1,840 feet. California Western Oil Co. is rigging up three wells to be drilled in this field in the immediate future and present plans call for the first to be spudded in before December 1. In the Rio Bravo district of Kern County Associated Oil Co. is reaming No. 1 K.C.L., a wildcat in section 7-28-29, but no decision has yet been made as to whether a string of casing will be landed. This wildcat has been running somewhat higher than Ohio Oil Co.'s test which was abandoned about 60 days ago and consequently work will be watched with extreme care. Associated's test has reached the point where the pay should be encountered if it is present at this point. Standard Oil Co. No. 1-11 K.C.L. in the Rio Bravo district has had several good showings but not enough to justify the expectation of developing commercial production. As a result drilling operations are continuing with the bit now at 7,700 feet. The Tejon ranch area of Kern County in the extreme southern end of the San Joaquin Basin took on a little better aspect when Ohio Oil Co. cored some oil stained gray sand and while the formation test was unsuccessful in that the sand appeared to carry water the showing was considered as favorable. Hall-Baker Co. has spudded in No. 1-10 Tejon in section 12-11-19 and this wildcat will be drilled with great care. The attention of operators was directed on this area several months ago by Reserve Oil & Gas Co. which seemed to have enough oil sand in one of its tests to result in production. On a production test, however, the sand proved rather dry and lacking in sufficient gas to make a conclusive production test. This company, which controls about 5,000 acres, has been considering the advisability of making a development deal with some other larger operator as it may be necessary to drill two or more additional tests before the apex of this possibly productive structure can be located.

Two drilling wells in the Ten Section field of Kern County, Standard's No. 10-1 K.C.L. in section 20-30-26 and Superior Oil Co. No. 8 K.C.L. in section 11-30-26, logged some showings but neither well has yet cored enough oil sand to justify making a production test. Standard Oil Co.'s well is deeper than Shell's discovery well and the outlook is not any too bright. In the Kern River field, Honolulu Oil Corp. completed No. 69 in section 8-28-27 and this new producer was brought in pumping 255 bbls. of relatively clean 15.7 gravity oil per day from 2,870 feet. The hole was finished with an 8⅝-inch water string landed and cemented at 2,774 feet and a 6⅝-inch liner including 102 feet of perforated. Honolulu has already spudded in No. 79 on this property and is building new rigs for two new wells scheduled for immediate work. Alvah M. Kaime's No. 1 Sesnon in section 17-28-27 was good for only 82 bbls. of 14.3 gravity oil per day from 2,895 feet and in addition to showing small production the well's output is showing a cut of 15 per cent. In the Midway-Sunset field of Kern County, Union Oil Co. No. 1 Midway Northern in section 7-11-23 was brought in pumping 123 bbls. of 15.1 gravity oil per day from 1,801 feet and appears to be able to hold up to this initial for some time to come as the well is drawing from approximately 200 feet of formation. This well was originally bottomed at 1,936 feet but was plugged back to the completion depth, 1,801 feet, immediately before completion. The Pomoc Oil Co. got a small pumper in this field when No. 8 Perris in section 15-32-23 was completed as it was good for only 40 bbls. of 22.9 gravity oil per day from 2,752 feet. Production of this well is relatively clean, however, indicating rather conclusively that the bottom plug proved effective as the hole had been plugged back from 2,810 feet before completion because of bottom water. In the Mount Poso field, Shell No. 30 Vedder in section 9-27-28 proved to be a good producer upon completion as it showed an initial daily production of 373 bbls. of 15.6 gravity oil per day from 1,790 feet. E. J. Harp No. 1 Salisbury on the other hand was good for only 24 bbls. of 15.1 gravity oil per day upon completion at 1,434 feet. In the Lost Hills field, Associated Oil Co. has completed No. 6-L-3 and this new well was good for 165 bbls. of 14.3 gravity oil daily from 2,253 feet.

Santa Fe Springs

Union Oil Co. in the Santa Fe Springs field completed No. 101 Bell, pumping 114 bbls. of 34.6 gravity oil per day from 5,415 feet. In the Long Beach field, Null & Hearon recompleted No. 2 Harbor after redrilling and deepening the hole from 4,128 feet to 4,470 feet and returned it to production pumping 123 bbls. of relatively clean 25.2 gravity oil per day. This hole was carried down to 4,618 feet but was plugged back to 4,470 feet before being put on production. In the Huntington Beach field where new drilling and remedial work has been increasing from week to week, Thursk, Moulton and Lane have succeeded in recompleting their No. 1 Golden Star after redrilling and deepening the hole from 3,400 feet to 4,096 feet. The well was returned to production pumping 102 bbls. of 22.1 gravity oil per day but the output is still showing a rather high water cut and may require some further remedial work.

In the Richfield district Union Oil Co. completed No. 37 Chapman and then matched this success by finishing No. 44 Hellman in the Dominguez field. The latter well, smallest producer in the Dominguez field for some time, was brought in flowing 126 bbls. of clean 31.5 gravity oil per day from 5,413 feet. No. 37 Chapman was finished on the beam doing 128 bbls. of 22.3 gravity oil per day from 3,498 feet after the hole had been completed with the 6⅝-inch liner including 291 feet of perforated. Richfield Oil Co. is expected to be in a

(Continued on Page 91)

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Nov. 28.—In the High River area east of Turner Valley, Arca Development Corp. No. 1, section 24-18-1w5, is below 7,896 feet after establishing a new deep drilling record for Canada. The record was previously held by McLeod Oil Co. No. 4, LSD 16, section 1-20-3w5, in the Central Turner Valley field, which in 1932 was carried to 7,751 feet. Arca No. 1 will be continued to test the Madison limestone, with the producing horizon now anticipated between 8,300 and 8,500 feet.

Backed by interests associated with Imperial Oil, Ltd., Canadian Western Natural Gas, Light & Power Co. and Calgary & Edmonton Corp., Ltd., unitized extensive acreage in this area for the purposes of the test, which is designed to prove or disprove a theory that the wet gas and naphtha of the Turner Valley field is derived from extensive crude oil reservoirs to the east. This theory regards the Turner Valley as the front fold from the main overthrust of the Rocky Mountains; and hold that the crude has found its way, after intensified natural refining, to the surface in Turner Valley through faults and fissures, with wet gas and naphtha in the higher parts of the structure and high gravity crude on the west flank near source of seepage.

Arca No. 1 spudded last spring and has attained its record depth with a minimum of drilling difficulties and without reporting any important shows of oil or gas. Heavy duty rotary outfit is being used, the Royalite Oil Co. handling the drilling. Location is 8 miles southwest of High River and about 9 miles due west of section 21 in South Turner Valley.

Farther north and east in the High

(Continued on Page 92)

Southwest Texas District

By GEORGE WEBER

NUECES AND WEBB COUNTIES RECEIVING MOST ATTENTION

HOUSTON, Tex., Nov. 30.—Nueces County operations and developments continued to hold the center of attention in Southwest Texas during the past week, as indications of a new producing area were shown, and exploration of recent discoveries was pursued. Several new wildcats and important edge tests in fields of the Laredo district are beginning, and the Edwards Plateau, a relatively dormant area recently, is taking attention of many operators as two important wildcats approach critical stages.

Sharing the spotlight with the wild Agua Dulce well, and developments in Saxet, Clara Driscoll and Flour Bluff, a Nueces County wildcat, Cosner & Cosner No. 1 Stockton showed indications of a possible new oil discovery in the county. The test is located in the SW cor. NE section 25, Laureles Farm Tracts, about 12 miles southwest of Corpus Christi. Sand cored at 4,520-32 feet had a slight odor of gas and tested salt water two weeks ago. Operators drilled 200 feet deeper, and on a drill stem test of sand from 4,720-26 feet, 700 feet of oil and 500 feet of salt water were recovered. The test is being carried deeper, at the latest report below 4,850 feet. A sand cored at 4,841-47 feet was not tested. The contract on this test calls for a depth of 7,000 feet.

Clara Driscoll, the small field located northwest of Driscoll in western Nueces County, is due for considerable development. Although no definite report has been made on the Hines No. 1-A Sevier, northwest outpost, a string of 5½-inch casing has been set at 6,035 feet, the bottom of the hole. Sand was reported cored in the test at 5,710-30 feet, a level which corresponds to the Frio production in the Saxet field.

Drilling operations are beginning on four new tests recently announced, and two other rigs are drilling near the sand. One completion was made during the week by Wellington Oil Co. which brought in No. 5 Sevier for an initial production of 12 bbls. per hour.

Wild Well Bridges

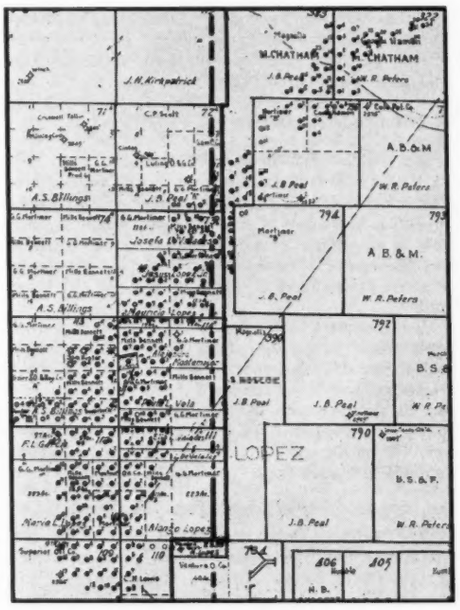
Nueces County's latest wild well, Texon Drilling Co. No. 1 Clara Driscoll Sevier is quiet at present, having bridged over and choked itself out Thursday. Although operators anticipate no further trouble with the test, a relief well is being drilled from an offset position, to kill the flow should the test blow out again. Plans were also under way before the well went dead, to blow out the flame and recover the large oil flow, which made the flaming crater one of the most spectacular in the history of the area.

Saxet's 6,300-Foot Sand

The newly opened and extended 6,300-foot sand in the Saxet field will be further defined shortly as additional tests drill in the field to that horizon. Two tests, Republic Natural Gas Co. Nos. 15 and 16 Dunn in the Sheppard Farm Lots, northeast section of the field, are drilling below the 5,800-foot sand to test the deepest production level in the field to date. Increased drilling continues in the Clarkwood or 4,400-foot section of the field, and the Frio or 5,800-foot section is receiving the bulk of the remaining operations. Five new producers were brought in during the week in the Clarkwood area, further developing the proven acreage recently opened east of Clarkwood townsite.

Flour Bluff continues to increase in activity. Six tests are active in the field, with half that number on the sand for possible early completions. All rigs now active in the areas are drilling for Humble Oil & Refining Co., Barnsdall Oil Co. and Hurlburt, major lease holders in the rapidly developing field. One new producer was added during the week, as the Humble No. 1 Phillips was completed for 105 bbls. per day after considerable reworking after it originally came in as a gasser. Two new locations were announced during the week.

Besides the Cosner wildcat, two other tests are making hole in the county. The Allen & Seaboard Oil Corp. No. 1 Chapman, located on a geophysical



The Lopez field now extends across the Webb County line into Duval County, where, in its northeast extremity, continuous extension has taken place for the past several months. The field numbers nearly 240 producers and will shortly be afforded a new pipe line outlet through a Magnolia line to Corpus Christi, Tex.
—(Porter Regenold, Maps, Corpus Christi)

high southwest of Corpus Christi is drilling below 6,100 feet, and the Renwar Oil Co. No. 1 Willoughby, a new test, is drilling below 1,450 feet 4 miles southwest of Driscoll.

San Patricio County

An important and interesting San Patricio County test was abandoned during the past week, precluding for the present the finding of commercial production in the White Point field. The test, Calloway No. 1 White Point Development Co., had cored oil sand at 4,856-64 feet and 4,912-15 feet, but failed to complete for a producer. It was carried to a total depth of 6,512 feet and plugged back after which sand cored in the sidetracked hole at 4,900-11 feet swabbed oil. In carrying the hole 3 feet farther to 4,914 feet the well made salt water and was abandoned. Although it did not open new production, the test showed the presence of deeper sands which might constitute the first appreciable oil production in the old gas field.

Elsewhere in the county, Hooper Rutherford No. 1 Willis, an east offset to Eleanor Oil Co. No. 1 Kline, is drilling below 6,350 feet. The Eleanor test attracted considerable attention several weeks ago when it cored a large sand body. No recent developments of importance have taken place in either of the tests, which are located between the towns of Gregory and Ingleside. Four miles north of Gregory, and about 5 miles from the above mentioned tests, Texon Drilling Co. is below surface casing on the No. 1 Harvey, wildcat in Block 13 of the Rincon Subdivision. Only other operations in San Patricio County were in the Plymouth and Taft fields.

Duval County

Duval County drilling is widespread, with active rigs in nine proven fields and five wildcat locations. The Loma Novia field is due important definitions or extensions as tests get under way in west and south outpost locations, and an east edge test has been announced. To the south and east of Loma Novia the Hoffman field was both extended and defined during the week. Bridwell Oil Co. No. 1 Robles, in Survey 68 in the northeast section of the field, was completed for 115 bbls. per day, extending the field's production in that direction. At the same time, McCandless & Cloyes No. 1 Sutherland, a northwest outpost of the field, due south of Loma Novia production, was abandoned after being carried to a total depth of 2,941 feet.

Following the discovery of new sand production in the Kohler field last week, two new locations and plans for further development of the field were announced. The Humble Oil & Refining Co. has begun drilling on the No. 2 Peters, an offset of the No. 52-A Kohler which last week opened the Mirando sand at 2,629-42 feet to commercial production.

Although the volume of drilling in the Lopez field of Webb and Duval counties is falling off, as operators drill up proven acreage, the northeast section of the field is still very active. During the past week three producers were completed, and at the end of the week eight rigs were in the field. Escobas and Haynes, shallow fields in Zapata County, continue to develop, with increasing numbers of operators each week.

Webb County

In Webb County, the Mid-Continent Petroleum Corp. No. 1 Laubscher, wildcat located 1½ miles northwest of Webb townsite, is drilling below 3,250 feet after production tests failed in sand at 2,909-89 feet. Webb County is now one of the leading wildcat counties in Southwest Texas, with eight tests under way. Seven of these, or all but the Mid-Continent wildcat, have started within the past two weeks. Further interest in that part of Southwest Texas is evidenced by the starting of a wildcat on the Gillman tract in Zavalla County by Wilcox Oil & Gas Co.

Edwards Plateau

Two Edwards lime tests in Fayette and Burleson counties are attracting considerable attention to the Edwards Plateau. Paul Teas No. 1 Vinklarek, Fayette County wildcat in the S. Millet League has set 5½-inch casing at 7,142 feet and will perforate at 7,122-39 feet for a production test shortly. The test is located about 10 miles south of the town of Smithville. In Burleson County the Red Bank Oil Co. is coring for the top of the Edwards at 6,150 feet. The test is running high in comparison with others drilled in the area, and the Edwards, where production is anticipated, should be reached shortly.

West and North Texas

By
L. E. BREDBERG

COCHRAN COUNTY DISCOVERY WELL NOT A LARGE PRODUCER

FORT WORTH, Tex., Nov. 30. — Cascade Oil Co., Honolulu Oil Corp. and Devonian Oil Co. have completed their discovery well in Labour 13, League 55, Oldham County School Lands Survey, in the southeast corner of Cochran County, thereby opening another producing area and adding a county to the producing list in the West Texas district. This new pool is the northernmost in the district, at least 27 miles north of the nearest other pool, opened by the first two of the above mentioned companies, in the southeast corner of Yoakum County last year.

The Cochran County well is not a big one, producing only 12 bbls. of oil per hour for seven hours through 2-inch tubing after shooting with 160 quarts of nitroglycerin at 5,019-60 feet, but it may be an edge well, or the lime may be exceedingly tight in it, and better wells may be produced on offset locations and leases. The Devonian Oil Co., Honolulu Oil Corp. and Cascade Oil Co. hold the greater part of the acreage around the well. Several leases are held jointly under the name of the Allied. Skelly Oil Co. holds a half section offsetting the discovery lease to the north, and Saltmount Oil Co. holds a half section to the east. The Texas Pacific Coal & Oil Co., Magnolia Petroleum Co., and other major companies hold leases in the area, but not near the well.

This discovery is 12 miles southeast of several abandoned tests drilled in the county by the old Marland Oil Co. and others several years ago, the Humble Oil & Refining Co. also drilled a dry hole this year southwest of Lehman to a total depth of 4,910 feet. Some oil was made in a couple of the Marland tests, but they failed to make commercial producers and were plugged.

Total depth of the new strike is 5,198 feet, but it was plugged back to 5,168 feet to shut off water before shooting and completing. Elevation is 3,694 feet. It is about 55 miles from the nearest pipe line and about 15 miles from the nearest railroad, consequently has no bright outlook for an outlet in the near future except by tank trucks which will probably transport oil to a small refinery at Lubbock which is also taking oil from the Yoakum County well to the south. This lack of outlet will no doubt reflect to hold down development of the new area, just as it has done in the Yoakum pool where the second well is now being drilled, a year after the pools was discovered.

This strike makes the Texas Co. No. 1 B. Slaughter, in Labour 83, League 38, Zavala County School Lands, about 12 miles to the southeast in Hockley County, assume more importance. That test has been held up by a fishing job for some time. Total depth is 3,065 feet.

Gaines Discovery

The second Gaines County discovery is another well of small caliber although it has been acidized twice in an effort to increase the production. Amerada Petroleum Corp. and others No. 1-A Averitt, located in section 228, Block G, W.T.R.R. Survey, 3 miles northwest of Seminole, is making only 10 bbls. of oil per hour through 1-inch choke on 2½-inch tubing. It was given two acid treatments, the last one after it was deepened from 5,022 feet to 5,029 feet, running 2½-inch tubing with bottom 15 feet perforated, and a packer set at 5,006 feet. At 5,022 feet it was given a 2,000-gallon dose of acid, with 1,000 gallons used in the second shot. After the first treatment it flowed 126 bbls. of fluid, 90 per cent of which was oil and the remainder wash water, on an 18-hour test, also making 11,700,000 feet of gas. The gas receded to 245,000 feet daily after the second acid dose, the oil increasing slightly.

The well is a southwest offset to a test drilled last year by Adams, Walsh and others on the Averitt ranch. That test was abandoned with the tools in the hole, at a total depth of 4,910 feet. It had shown an estimated 12,000,000-foot wet gas production. Amerada and others which own acreage in the area felt that there was oil on the structure and consequently contracted to drill this present discovery, which reverts to Adams when it is considered completed. It opens up the county's second pool within three months, the other pool having been opened by Landreth Production Company about 9 miles southeast. That discovery proved an even smaller well than the latest one, and a test drilled on the trend between the two proved a dry hole about 2 miles to the northwest of the Landreth discovery.

Another Extension

Phillips Petroleum Co. and Pure No. 7 Clyde Cowden, located in the SW quarter of section 13, Block 44, Township 1s, T.&P. Survey, Ector County, now is appearing as a half-mile east extension to the Goldsmith field which was given a half-mile western extension last week by a Gulf Oil Corp. well.

This newest extension showed saturation in cores taken at 4,072-87 feet presaging production and expanding the producing area of the field which as yet is undefined in any direction and has 11 producers in it, with chances that it will connect with separate producing pools to the northwest extending production over an area of about 12 miles in length from the southeast to northwest.

Wildcat Test

The Gulf Oil Corp. has staked location for No. 3 Waddell, SW cor. section 21, Block B-21, P.S.L. Survey, Crane County, 1½ miles northeast of the nearest production in the Tubbs pool and 3 miles east and a little north of the same company's lone Ordovician producer, also 1¾ miles southeast of another deep test which has failed to make a producer from the Ordovician, thus far.

Clark and others are rigging up a machine in section 12, Block B-22, P.S.L. Survey, in the northern part of Crane County. This is west of the Waddell pool.

Two more wildcat locations were staked in Jones County this week. One was made by H. D. Egger and others on the O. Roberts lands in section 26, Orphan Asylum Lands Survey, and the other by Ungren and Frazier on the Trothers farm, in Lot 1, Subdivision 2, E. C. Miller Survey.

The first wildcat test drilled by a major company in Jones County in a long time, by the Humble Oil & Refining Co. on the Alexander farm, in the William C. Walker Survey, around which the company had a 1,700-acre block, has been abandoned at a total depth of 2,213 feet after striking only a slight showing of oil in the King sand.

To Deepen

Charles M. Baines, drilling contractor of Childress, Tex., is preparing to deepen the old test 10 miles southwest of Tahoka in Lynn County which was drilled to 5,005 feet by Edgar T. Hart and associates, and which has been standing shut down for several months. Location is in the SE quarter of section 29, L.&S.V.R.R. Survey, and contract calls for 6,000 feet of hole unless commercial production is found at a shallower depth.

R. H. Henderson of Midland is preparing to drill three tests in the McCamey area in Upton County. No. 1-A Baker is to be drilled in section 7, Block R, G.C.&S.F. Survey, about one-half mile southwest of production. All three tests are to seek the regular pay found in this area with deep rights held by the companies farming out the acreage for them.

Andrews Extension

The Sun Oil Co. is extending the Means field in northeastern Andrews County at least one-half mile to the west in its No. 1-B Means, located in the NW quarter of section 22, Block A-35, P.S.L. Survey, one-half mile west of the Humble Oil & Refining Co. No. 9 Means, which is the southernmost producer in the field. The Sun test topped the pay at 4,448 feet and was drilled to a total depth of 4,536 feet preparatory to making a test.

Wildcat Abandonment

Bahan and Rhodes No. 1 H. E. Bonebrake, located in section 111, Block 8, H.&G.N. Survey, 4½ miles west of the Pecos Valley pool in northern Pecos County, was abandoned this week at a total depth of 2,230 feet after striking sulfur water at 2,223-30 feet. Elevation is 2,504 feet. The Tex-Mex Petroleum Co. also abandoned a test in this same county this week, its No. 1 fee. Total depth was 2,378 feet and elevation 2,459 feet. The Ohio Oil Co. temporarily abandoned a shallow test and the California Co. temporarily abandoned two shallow tests in the Yates area, Pecos County, this week.

CENTRAL AND NORTH TEXAS

Only four completions were reported in the Ranger district this week. Several wildcat locations were announced, the most extreme of which is that of the Texas-Canadian Development Co. on the Leverett farm, in Block 19, Smith County School Lands, 5 miles northeast of Rhome. This is to be a 3,500-foot test.

In northwestern Dallas County the Mauldin Oil Co. of Dallas has a 122-foot derrick up on the W. E. Howell lands, in the Whitman Survey, 15 miles northwest of Dallas, to sink a 4,000-foot test on a 7,000-acre block which lies near the Tarrant County line.

6,000-Foot Test

A deep test of interest to the North Texas operators is to be drilled by S. S. Alexander of Fort Worth on the J. F. Marshall lands, about 6 miles north of Dexter in Cooke County. The operator holds some 4,000 acres in a block around the location, which is near the Grayson County line and near the Red River, about 6 miles southeast of the Amerada and Stanolind Oil & Gas Co. No. 1 Westheimer in eastern Love County, Oklahoma, which showed some oil in the Viola lime at 2,430-2,970 feet, but failed to come through as a commercial producer.

The Big Indian Oil & Development Co. has abandoned its No. 1 McFaddin, in the Bond Survey, southeast of Gainesville, in Cooke County, at a total depth of 2,100 feet.

Cooke County

Southern Cooke County is to receive a test, expected to go to 4,000 feet, on a block of some 1,700 acres assembled and to be drilled by A. A. Lander, Inc., of Dallas. Location is on the B. M. Mann Estate, in the J. O. Hill Survey, 3 miles southeast of Valley View. Bourland & Gannon of Wichita Falls have contract to sink the test. Seven miles southeast of Gainesville a wildcat is to be

drilled on the J. S. Clark lands, in the W. Anderson Survey, and another wildcat for the county is to be drilled northwest of the above-mentioned failure on the McFadden lands. Location for this new test is on the D. B. Wheelock farm, 6 miles southeast of Gainesville, and another test is going in on the Jones farm in the Lawson Survey, south of Gainesville. Merrick, Inc., of Ardmore, Okla., is to drill this test. This immediate area is one of the hottest spots in the North Texas district.

Throckmorton County is to receive a test in the area 10 miles northeast of Throckmorton. Gibson & Jennings, Inc., of Dallas are to drill a 1,500-foot rotary hole on the Mrs. A. B. Steele lands in the Polk County School Lands Survey.

Anderson-Kerr Extension

M. L. Harris and others are drilling plug on No. 1 R. D. Williams, located in the C. C. Bailey Survey, about 1 mile north of the Anderson-Kerr pool, 3 miles southeast of Gainesville in Cooke County. The sand in this test was logged at 2,165-70 feet, 2,710 feet being bottom of hole. This will mark a considerable extension to the pool, which is defined in nearly all other directions.

There were 52 completions reported for the North Texas district this week, 21 of which proved dry and the remainder producers. Next to the entire East Texas district, which includes the East Texas field, North Texas reports more completions per week than any other district.

WEST TEXAS COMPLETIONS

Cochran County

Cascade, Honolulu and Devonian Oil Corps. No. 1 E. B. Duggan, 5,180-98 feet, plugged back to 5,-068 feet. Shot with 160 quarts from 5,019-60 feet. Initial production 12 bbls. of oil per hour for seven hours, through 2-inch tubing. Elevation 3,-694 feet.

Crane County

Gulf Oil Corp. No. 141 McElroy, 2,775-2,996 feet, shot, 538 bbls.; No. 6 Henderson, 3,340-3,622 feet, shot, 35 bbls. of oil and 54 bbls. of water per day. American Liberty Oil Co. No. 1 Tubbs, 4,419 feet, acidized, 130 bbls.

Ector County

Schermerhorn Oil Co. No. 1 J. L. Johnson, 4,-060-4,171 feet, shot, 528 bbls. Gulf Oil Corp. No. 9 Goldsmith, 4,114-4,212 feet, acidized and shot, 731 bbls. Stanolind Oil & Gas Co. No. 37 Cowden, 4,100-4,277 feet, shot, 193 bbls. Skelly Oil Co. and others No. 2 McKenzie, 3,540-3,700 feet, shot, 300 bbls.

Howard County

Pure Oil Co. No. 6 Chalk, 1,706-75 feet, 70 bbls. Continental Oil Co. No. 18-S Settles, 1,235-73 feet, 448 bbls. Sinclair Prairie Oil Co. No. 44 Dodge, 2,455-2,820 feet, shot, 357 bbls.

Jones County

Charles Kleiner No. 1 Bert Fields, dry and abandoned at 2,219 feet.

Pecos County

Tex-Mex Petroleum Co. No. 1 fee, dry and abandoned, 2,378 feet, elevation 2,459 feet. Stanolind Oil & Gas Co. No. 10-C Tippett, 454-90 feet, 196 bbls. of oil and 13 bbls. of water. Ohio Oil Co. No. 12-C Yates, temporarily abandoned, 555 feet. California Co. No. 25 Yates, temporarily abandoned, 519 feet; No. 4 Reed, temporarily abandoned, 384 feet. Bahan and Rhodes No. 1 Bonebrake, dry and abandoned, 2,230 feet, elevation 2,504 feet.

Shackelford County

Crawford and others No. 1 Morris, Morris-Buie pool, 1,540 feet from north and 220 feet from west lines of section 190, E.T.R.R. Survey, sand 1,561-79 feet, 190 bbls. Dale H. Dorn No. 2 Green, 1,540 feet from north and 220 feet from west lines of section 72, T.&P. Survey, Block 12, total depth 1,290 feet, dry and abandoned. White & Duncan No. 1 Davis, 2 miles southeast of Morris-Buie pool, 220 feet from north and east lines of SW quarter section 22, E.T.R.R. Survey, total depth 1,795 feet, dry and abandoned.

Throckmorton County

Canyon Oil & Gas Co. No. 1 Lily, 2 miles south of Throckmorton, 150 feet from east and 450 feet from south lines of section 279, B.B.B.&C. Survey, total depth 417 feet, dry and abandoned.

Upton County

Texas Pacific Coal & Oil Co. No. 15-C Lane, 2,170-2,274 feet, acidized, 1,102 bbls. Gulf Oil Corp. No. 2 Rogers, 2,145-2,237 feet, acidized and shot, 574 bbls. Humble Oil & Refining Co. No. 3 Reese, 2,584-2,630 feet, acidized, 172 bbls. in 17 hours. International Petroleum Corp. No. 7 Lane, 2,175-2,225 feet, acidized, 325 bbls. Cardinal Oil Co. No. 1-B Wooley, 2,144-63 feet, 529 bbls. Smith and Cravens No. 6 Reese, 2,345-52 feet, acidized, 892 bbls.

Ward County

Abell Brothers No. 6 Potts, 2,290-2,390 feet, shot, 41 bbls. Reno Oil Co. No. 3 Hardage and Wilson, 2,328-2,557 feet shot, 172 bbls. Messenger No. 2 Cole, 2,192-2,311 feet, shot, 193 bbls. Richardson No. 10 Hathaway, 2,500-2,635 feet, 3,162 bbls.; No. 13 O'Brien, 2,706-3,100 feet, shot, 407 bbls. Gulf Oil Corp. No. 60 Hutchins, 2,478-2,750 feet, shot, 2,296 bbls.

Winkler County

Magnolia Petroleum Co. No. 5 Colby, 2,916-3,130 feet, shot, 442 bbls. Humble Oil & Refining Co. No. 9-A Colby, 2,754-3,015 feet, shot 796 bbls.; No. 17 Howe, 2,796-3,000 feet, shout, 1,658 bbls. Adams No. 5-A Walton, 2,795-3,103 feet, 1,100 bbls. Sinclair Prairie Oil Co. No. 5-C Walton, 2,845-2,-975 feet, shot, 1,258 bbls.; No. 10-B Walton, 2,845-2,975 feet, shot, 1,412 bbls. Illinois Oil Co. No. 4-A Central State Bank of Abilene, 2,933-3,131 feet, 1,924 bbls. Skelly Oil Co. No. 15 Halley, 2,-707-2,881 feet, 1,056 bbls. Champlin and Bass No. 1 Hess, 3,010-70 feet, 1,917 bbls. Maxwell No. 1 Daugherty, 3,023-88 feet, 788 bbls. Uscan Oil Co. No. 1 Daugherty, 3,066-3,100 feet, 416 bbls. Falcon Oil Co. No. 5 McCutcheon, 3,208-3,600 feet, 135 bbls. Sun Oil Co. No. 2 Walton, 3,320-70 feet, shot, 230 bbls. Texas Pacific Coal & Oil Co. No.

(Continued on Page 92)

Then ...as NOW

***the* SAME . . . . . DEPENDABLE PRODUCTS**

DARCOVA (Orange Label) the standard for more than thirty years under severe service at all depths.

DARVAL (Blue Label) for service in wells to approximately 2,000 feet in depth.

DARFLEX (Green Label) the popular favorite for wells to 800 feet in depth.

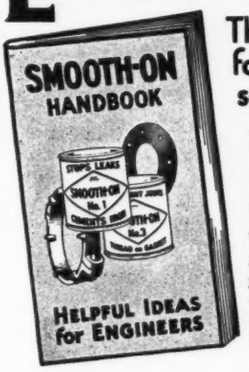
Uniformity over a thirty year period is more than a recommendation—it's a **definite** assurance of service and savings that explain why America's first composition cups remain **foremost in the field!**

Manufactured Only by

DARLING VALVE & MFG. CO.

WILLIAMSPORT, PA.

ENGINEERS:-



This was written for you. May we send you a copy

FREE

Valuable suggestions on routine and emergency repair practice. Reliable advice on problems you may sometime face. Well indexed for quick reference.

THIS compact booklet contains over 100 diagrams with simple instructions which will enable you to avoid much overtime labor, worry and expense on such jobs as the following:

Making tight new and stopping leakage at old screwed or flanged joints—Repairing cracks in boiler shells, tube sheets and headers—Making tight joints and stopping leaks at seams, rivets, and manhole covers—Restoring contact faces of corroded flanges—Repairing leaks, cracks or porous spots in engine and pump cylinders—Stopping leaks in cracked fittings, valve bodies, centrifugal pump shells, fuel economizer headers, feed heaters, separaters, condensers, steam kettles, etc.—Making emergency joints without fittings—Making unfinished iron joints, press-fit joints, bell-and-spigot joints without lead, etc.—Making hard-surfaced water and oil-proof machine foundations, floors, wheel pits, sumps, cooling ponds, filtration beds, underground storage tanks, etc.

You would be astonished at the speed, safety and ease of making Smooth-On repairs, and the dependability and permanence of all proper applications. Read this booklet, keep it, and be ready for the next emergency. Your first use of Smooth-On will prove it indispensable.

Get the book by mailing the coupon, and buy Smooth-On from your supply house or if necessary direct from us.

SMOOTH-ON MFG. CO., Dept. 66, 570 Communipaw Ave., Jersey City, N. J.

Please send copy of the SMOOTH-ON HANDBOOK.

Name .....

Address .....

.....

12-36 .....

***Do it with* SMOOTH-ON**

Michigan Field Report

HIGH GRAVITY CRUDE IN NEW POOL IN MONTCALM COUNTY

By
PAUL A. ELLIOTT

MUSKEGON, Mich., Nov. 30. — Flowing by heads, the Daily Crude Oil Co. No. 1 Weatherby, near Howard City, SW SW SE section 20-12n-9w, Winfield Township, Montcalm County, indicated possibilities of a new central Michigan oil field last week in the Monroe formation.

Oil was encountered at 3,311 feet and the hole filled rapidly, making about half a dozen heads of 5 or 6 bbls. each for an initial rated at 50 bbls. a day before all drilling had been completed. Further drilling was anticipated over the week-end.

Scores of operators, lessees and major company officials were attracted to the Weatherby well, located 1½ miles south of the Thompson-Knapp well, an 8,000,000-foot gasser in the Michigan Stray sands in section 17, Winfield Township, before it was deepened to the Dundee without success.

Crude from the new well is reported to have tested about 47 gravity A.P.I., or considerably higher than any other yet encountered in Michigan where gravity has ranged from 36 to 44 points heretofore.

Prior to success in the Monroe, the Weatherby well struck a show of oil and gas in the Traverse at 2,923 feet after topping the limestone at 2,725 feet. The new well is about 35 miles east and 15 miles north of Muskegon making it the closest to the old West Michigan field of any oil developments in central Michigan.

Southeastern Michigan

Another interesting development was the completion of a 65-bbl. Trenton limestone well in the Dundee Township field, Monroe County.

Ross & Vale brought in No. 1 LaVliet, SW NW SE section 19-6s-6e, Dundee Township, topping the Trenton at 2,135 feet and striking oil at 2,160 feet. The well was plugged back 10 feet and shot after drilling below this point. Oil from this test also was reported of higher grade than other Michigan crudes. Several smaller wells previously have been completed in the southeastern field over a period of eight years but few have exceeded 10 bbls. a day.

Wandle Oil & Gas Co. was nearing Trenton in No. 1 Hugo Gaertner, SW SW SE, same section, an offset to the LaVliet. A. V. Oil & Gas Co. has started No. 2 Roe, SE SE SW, same section, while Ross & Vale are planning two more tests in the immediate vicinity.

Western Michigan

Lentz & Miller, independent Muskegon operators, last week brought in the largest Berea gas well in the new Ravenna field, No. 1 Clink Estate, SE SE SW section 12-9n-15w, Sullivan Township, gauging 3,008,000 feet when drilled only 4 feet into the sand topped at 1,151 feet.

The new gasser nearly doubled the open flow capacity of the field in which four wells previously completed aggregate about 3,500,000 feet. It also extended the field about three-fourths of a mile west adding fully 1,000 acres to the proved area, or 50 per cent more than the previously proved 2,000 acres.

West Michigan Consumers Co., operator of an industrial gas line to Muskegon, immediately tied in its new $50,000 line to the Ravenna field. The hookup was to be temporarily disconnected over the week-end to make possible deeper drilling expected to increase the flow. The Clink well is three-fourths of a mile west of the same operator's No. 1 Zayacz, previous largest producer in the field, which made 1,039,000 feet in 16 feet of pay. Structures are considerably higher in the new well indicating possibilities of oil in this direction.

Three new tests are being started: Lentz & Miller No. 1 Peter Balawender, SW SW section 18-9n-14w, Ravenna Township, and two for West Michigan Consumers, No. 1 Bossett, Bennett-Eason-Thompson, SW quarter section 8, and No. 1 Sperry-Bennett-Young, NE quarter section 8, both in Ravenna Township, the first to be drilled by Rex Oil & Gas Co. and the other by Muskegon Development Co. as contractors. West Michigan recently acquired gas rights to about 16,000 acres, virtually controlling the field which the company proposes to develop on a basis of one well to every 160 acres, a new pattern for well-spacing in Michigan.

New Field Tests

Attention of many operators was still centered upon Arenac and Isabella counties, where two tests near recent discovery wells were nearing completion.

McClanahan Oil Co. was expected to reach the Dundee this week in No. 1 Mee, NE SE SW section 11-20n-4e, Clayton Township, where the same company recently brought in the sensational No. 1 Seignious, which last week flowed more than 1,000 bbls. a day as one of three important recent discoveries in the state. It is three-fourths of a mile south and the same distance east of the discovery.

Mountain Oil & Gas Co. and Dapar Oil Co. also attracted attention with their No. 1 Thompson, SE SE NE section 17-15n-6w, Sherman Township, 3 miles north and 1 mile west of Pure Oil Co. No. 1 Embrey, recently completed 900-bbl. discovery well in this area near the Broomfield Township, Isabella County, gas field. Traverse was topped at 3,109 feet and operators are drilling at more than 3,400 feet with Dundee or Monroe anticipated at about 3,600 feet. Operators have not definitely decided whether the Embrey is producing from the Dundee or Monroe, though the latter is believed correct by most commentators. More than half a dozen other tests were being started in the new area.

In the North Vernon area where Chartiers Oil Co. No. 1 Currie, another 800 to 900-bbl. initial producer, opened another new field, two tests were nearing the Dundee in Isabella County, T. F. Caldwell, Inc., No. 1 Stuart Beatty, NE NE SE section 21-16n-4w, and Nollem Oil & Gas Co. No. 3 Slentz, SW SW SW section 23.

McClanahan Oil Co. and Victory Petroleum Corp. are expected to plug and abandon No. 1 Cook, NW NW SE section 15-16n-5w, Gilmore Township, an Isabella County wildcat near the village of Farwell, which struck water in the Monroe at 4,149 feet.

Hyatt & Norton developed a 30-bbl. flow in the first hour from No. 1 State, SW NW SW section 34-15n-3w, Denver Township test, and were expected to complete soon in the Dundee.

Wildcat Tests

The R. E. Gallagher No. 1 H. Hayden, NW NE NE section 25-11n-7w, Douglass Township, Montcalm County, struck an interesting but not commercial show of gas in the glacial drift at about 300 feet, but continued drilling.

Charles Van Keuren and Keith B. Montigel, trustees, were cleaning out after a shot in No. 1 Hiawatha Sportmen's Club, C W W NW section 9-44n-9w, Garfield Township, Mackinac County, Upper Peninsula test plugged back from 1,501 to 1,200 feet to test a show of gas after failure in the search for oil in the Trenton limestone.

Operators were drilling out cement in the Harley Williams No. 1 Hanson & Rae, SE SE SE section 15-30n-1w, Charleton Township, Otsego County, test in the northern part of the Lower Peninsula, after the hole caved at 915 feet while resetting casing to the top of the Dundee at 2,275 feet.

Fletcher & Leman, Trustees, also were drilling into the Dundee in No. 1 Childers, NW NE SE section 15-24n-1w, Richfield Township, Roscommon County, another northern Michigan wildcat.

Jacob Beck also was testing Trenton in his No. 1 fee, NW NW SE section 16-6s-3w, Fayette Township, Hillsdale County, in south central portion of the state.

Completions

The West Branch Township area in Ogemaw County led the state in completions with four oil wells producing a combined initial of 636 bbls., three from the Dundee and one in the Traverse.

The largest of the new Ogemaw wells was Weber Oil Co. No. 3 Crawford, NE NE SE section 28-22n-2e, which flowed 300 bbls. a day from the Traverse topped at 1,747 feet and drilled in 12 feet to 1,759 feet.

Weber Oil Co. also completed No. 1 John Sutherland, NE NW SE section 35, West Branch Township, for 150 bbls. initially in the Dundee topped at 2,477 feet and drilled to 2,636 feet. It later settled to 50 bbls. daily.

Fortney Oil Co. also brought in No. 1 Fred Fisk, SW NW NE section 28, same township, with an initial flow of 170 bbls. after acid treatment which also settled to 50 bbls. daily in the Dundee topped at 2,569 feet and drilled to 2,739 feet.

Durham & Jones No. 1 Hugh Allen, SE NW SE section 20, same township, was making 16 bbls. naturally in the Dundee topped at 2,547 feet and suspended at 2,727 feet. It may be treated.

Three other tests in the same township had been drilled into the Dundee and were completing. They were Mohawk Oil Development Co. No. 1 Country Club, SE NW SW section 20, Morris & Barnes No. 6 Golf Course, NW SE SW section 20, and A. E. Butterfield No. 1 Baumchen, NE NW SW section 27.

M. J. Ingold struck oil from 2,722 to 2,735 feet in No. 2 Grover Zettle, SW SE SW section 13-22n-1e, Ogemaw Township and county, after topping Dundee lime at 2,704 feet. W. J. Bernier also struck several shows in the Dundee in the No. 1 Weiler, NE SE SW section 14, Ogemaw Township, and was completing. Simmons Petroleum Corp. is acidizing No. 1 Husted, SE NW SE section 24, same township, after a shot failed to develop sufficient additional production.

Dry and Abandoned

Two tests in Clinton Township were abandoned, one after drilling to the Marshall formation in a projected core test and the other after failure in the Dundee. The former was Petroleum Exploration Co. No. 1 Homer Jenison, C S NE SE section 6-5n-1w, Bath Township, abandoned at 800 feet, and the latter was Stork Oil Co. No. 1 Edward Parker, SW SW NE section 25-7n-1w, Ovid Township, dry in the Dundee.

Though not definitely abandoned, D. F. Jones No. 1 Doan, SW NW NW section 33-18n-1e, Hay Township, wildcat in Gladwin County, had drilled about 200 feet in the Dundee without success to a depth of 3,700 feet. Dundee was struck at 3,496

O.K'd by ACE drillers

When a real top-flight rig boss meets the Dean Core Drill it's love at first sight . . and his coring troubles are over. He knows, or he will soon learn, that the Dean will recover a good core, no matter how deep he sends it nor in what type of formation; since the core catcher is under his immediate control at all times and he can open and close it by pump pressure at will.

Driller Roy Pruitt (above) is inspecting a sample of Dean Coring efficiency—a 30-foot, 6½" diameter, hard-shale core (shown after it was broken up for inspection) taken in one run with a 14¾ Dean Roller Type Core Drill from a well in the tough Belridge, California, field.

Write for latest descriptive bulletin.

DEAN OIL TOOL COMPANY

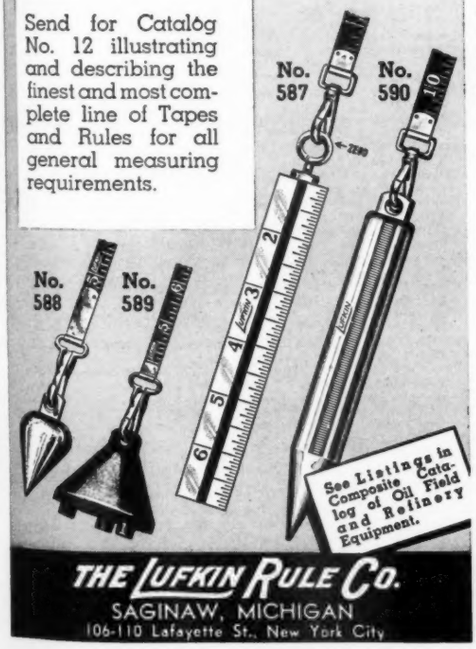
3200 Alameda Blvd. (Box 3200, Route No. 2) Compton, Cal. Mid-Continent Service Agency: Farris-Contrell, Inc., 2215 So. Robinson St., Oklahoma City, Okla.

LUFKIN

GAGING TAPES

Supplied with various Plumb Bobs to meet each particular requirement.

Send for Catalog No. 12 illustrating and describing the finest and most complete line of Tapes and Rules for all general measuring requirements.



THE LUFKIN RULE CO.

SAGINAW, MICHIGAN

106-110 Lafayette St., New York City

feet. Muskegon Development Co. was nearing completion of No. 1 Wineman, SW SW SE same section, after topping Dundee at 3,512½ feet. Gordon Oil Co. was testing the No. 1-B Havens, NE SW NW section 25-18n-1w, Buckeye Township, same county, for a show before a shot.

Taggart Brothers, Inc., were shut down at 3,900 feet in No. 1 Waters, NW SW SE section 28-16n-8w, Chippewa Township, Mecosta County wildcat, which topped the Dundee at 3,870 feet. Taggart Brothers were starting two new gas tests in the Austin Township, Mecosta County, field.

Jaenicke Oil Co. was considering deepening to the Monroe in No. 1 Moulton, SW NW SW section 31-12n-2e, Richland Township, Saginaw County, near Merrill, and near the King-Kube test which struck a heavy flow in the Traverse on the way to the Dundee about a year ago. Three oil shows were encountered in the Moulton, which topped the Dundee at 3,170, 3,205, 3,215 and 3,224 feet. Bottom water was struck at 3,225 feet and drilling operations suspended.

Midland County

Pure Oil Co. struck a Dundee show in No. 12 Bond-Root, C N NW SE section 3-13n-2w, Jasper Township, Midland County, which made 7 bbls. in 10 hours. The test was being treated with acid before completion.

Roosevelt Oil Co. developed a flow of 60 bbls. naturally in No. 10 Campbell, NE NE NW section 17-13n-1w, Porter Township, and was acidizing in the Traverse topped at 2,805 feet and drilled to 2,961 feet.

Bauman & McCollister decided to abandon No. 1 Rayner, C N NE NE section 5, Jasper Township, after topping Dundee at 3,588 feet and striking water at 3,633 feet, total depth, 3,636 feet.

Louisiana-Arkansas Fields

(Continued from Page 67)

Lewis No. 1 W. Haynie, SW SW NE of section 5-14-20.

Miller County

C. V. Lenz No. 7 Dale, old well drilled deeper in section 24-15-26, Miller County, Arkansas, continues to be highly regarded as a possible deep field opener, after showing both oil and gas on drill stem test at 4,210-16 feet. Casing has now been set at 4,209 feet, and preparations are being made for a test. Nearby Harber & Parks have built a derrick for the immediate drilling of No. their 1 Dean, NW SE section 24-15-26.

Union County

The sixth oil producing sand was added to the Rainbow field east of El Dorado during last week when S.H.A. Oil Co. drilled plugs at its No. 2 E. F. Gregory, SW NE SW of section 10-17-14, after setting casing at 3,410 feet. From a total depth of 3,437 feet fluid level has raised to a point indicating a possilbe 500-bbl. producer. This well formerly produced from the Taylor sand at about 3,390 feet, and was deepened to its present level to discover the new horizon.

Tomblin & Gilbert No. 1 Taylor, section 27-19-15, was found dry at 2,308 feet and abandoned.

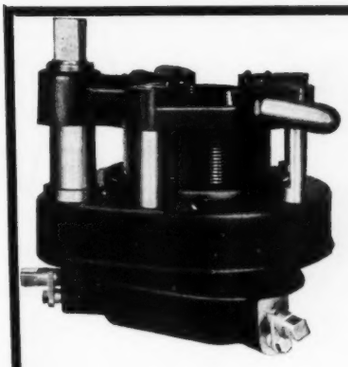
ALABAMA

Robert Herman, president of Grand Bayou Oil & Gas Co., Mobile, Ala., announces location for No. 1 J. A. Stafford, SW SW section 24-7s-3w.

FLORIDA

The All Floridoil Corp. is now employing a magnetometer crew of W. M. Barrett's, Shreveport, in detailing work in northern Florida along the Suwannee River and south of Tallahassee. Both vertical and horizontal instruments are being used and it is reported that one or two well locations will be staked shortly.

The Oil Development Co. of Florida is now coring at 5,670 feet in No. 1 Gulf Exploration Co., section 17-24-25, Lake County. This well has been well cored and reports that the section is about 90 per cent lime, 8 per cent anhydrite and 2 per cent shales and green sands. A 600-foot bed of massive anhydrite was penetrated in the Eocene.

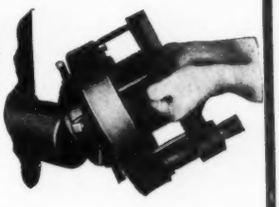


FOR BETTER PIPE THREADS

—on 2½" to 4" pipe may we suggest a "TOLEDO" No. 2BR Geared Adjustable Ratchet Threader.

No bushings. Long life pipe holder. Quick, easy, accurate centering. A separate set of dies for each size pipe. Light in weight yet strongly built to give years of good service.

The ideal type of threader for work in the field.



LIGHT, COMPACT, EASILY HANDLED. ONE MAN EASILY PLACES ON PIPE. NET WEIGHT AS SHOWN HERE READY TO PUT ON PIPE IS BUT 57 POUNDS.

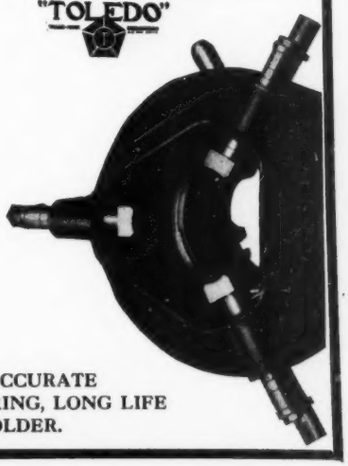
Long life pipe holder—3 broad-faced chuck jaws operated by heavy set screws and size marked guide bars make for easy, quick, accurate centering. Simple, strong, good for years of service.

Sold by leading oil well supply dealers.

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

New York Office, 72 Lafayette Street

"TOLEDO"



EASY, ACCURATE CENTERING, LONG LIFE PIPE HOLDER.

Rocky Mountain Area

By
T. R. INGRAM

NEW COLORADO POOL STARTS WITH LARGE OIL-GAS OUTPUT

DENVER, Colo., Nov. 30.—Colorado came to the front this week with a new oil pool in northern Moffat County in the Mountain Fuel Supply Co. No. 1 Allen and is estimated at 1,000 to 1,500 bbls. daily in the Lower Wasatch at 5,032 feet. Discovery makes wildcatting in Tertiary structures attractive where heretofore they have been passed up.

In Wyoming, the Ohio Oil Co. No. 11 Harrison & Cooper, Rock River field, swabbed 872 bbls. the first day from the Sundance. Two new locations, one a semiwildcat, were spotted in the Lance Creek field where several wells are near completions.

The Cut Bank field in Montana was extended 4½ miles to the south in R. C. Tarrant No. 3 Reikhoff, which swabbed 40 bbls. the first 14 hours. The Texas Co. had two completions. Kevin-Sunburst had three completions, one a dry hole and one a small gas well.

The gas area in the Dakota sand on the Clay Basin structure in Utah was extended half a mile in the Mountain Fuel Supply Co. No. 1 State.

NEW MEXICO

Only three wells were completed in southeastern New Mexico the past week, but several others were nearing completion and showing as good oil producers. The largest completed well was Shell Petroleum Corp. No. 2 State "F," C SW NW section 6-21-36, Eunice area. It had initial production of 2,280 bbls. of oil naturally in 24 hours, with gas volume of 2,890,000 feet. Production was from pay at 3,729-3,851 feet, total depth.

In the Monument area, Amerada Petroleum Corp. No. 1 Theo. Anderson, C NE SW section 8-20-37, flowed 792 bbls. of oil naturally through 1-inch tubing choke in the first 24 hours. It had pay at 3,796-3,876 feet, total depth. Packer was set at 3,824 feet. Same operators No. 5 State "T," C SW NE section 20-19-37, was bottomed at 3,997 feet, in pay topped at 3,875 feet. It was acidized with 4,000 gallons and flowed 458 bbls. in 24 hours through 1-inch tubing choke.

Shell Petroleum Corp. No. 2-B Cooper, C NW NW section 4-20-37, was a near completion. It flowed 395 bbls. of oil in three hours through tubing, with gas volume of 2,170,000 feet. It was acidized with 2,000 gallons at 3,899 feet, total depth. Same operators No. 3-B Cooper, offsetting No. 2-B Cooper to the south, was acidized with 2,000 gallons, total depth 3,899 feet, and flowed 460 bbls. of oil in three hours through tubing, but was not reported as a completion.

Some attention was attracted to Roosevelt County during the week, when Maxwell, Crandall & Osmond No. 1 Williamson, C NW NW section 7-8s-36, had a rainbow showing of oil and a slight showing of gas through rotary drilling mud at 2,125-29 feet. It was bottomed at 2,302 feet in anhydrite, and was rigging up standard tools.

First reports were made of 16 new operations in Lea County and 2 in Eddy County.

Monument Area

Gulf Oil Corp. No. 2 Kutter-State "B," C SW NW sec. 38-19-37. T.D. 3,946 ft.; failed to flow after acidizing; reacidized with 5,000 gallons.

Atlantic Pet. Corp. No. 1 Crutchfield, C NE SE sec. 32-19-37. T.D. 3,914 ft.; acidized; 13 bbls. per hour; setting packer.

Skelly Oil Co. No. 2 State "F," C SW SE sec. 17-20-37. Cellar and pits.

Phillips Pet. Co. and Anderson-Prichard Oil Corp. No. 1 Hobbs, C NE SW sec. 18-20-37. Drlg. 3,790 ft.

Texas Co. No. 4 Mattern, C NE SW sec. 20-19-37. Drlg. 3,812 ft.

Gulf Oil Corp. No. 2 Love, C SE SE sec. 32-19-37. T.D. 3,898 ft.; acidized and testing.

Shell Pet. Corp. No. 3 Cooper "B," C SW NW sec. 4-20-37. T.D. 3,899 ft.; flowed 460 bbls. in 3 hours.

Amerada Pet. Corp. No. 1 Adkins, C SW SW sec. 5-20-37. T.D. 3,732 ft.; killed gas; trying to drill.

Texas Co. No. 3 Cooper, C SW NE sec. 5-20-37. T.D. 3,886 ft.; to test.

Continental Oil Co. No. 5-A-3 Reed, SE SW NE sec. 3-20-36. Drlg. 3,519 ft.

Humble O. & R. Co. No. 1 State "D," C SE NE sec. 20-19-37. T.D. 3,996 ft.; swabbing and testing.

Texas Co. No. 2 Cooper, C NE NE sec. 5-20-37. T.D. 3,760 ft.; set 7-in. csg.

Continental Oil Co. No. 1 Britt "A," C NE NW sec. 18-20-37. T.D. 3,810 ft.; set 5½-in. csg.

Amerada Pet. Corp. No. 7 Weir, C SW SE sec. 26-19-36. T.D. 3,993 ft.; to test.

Continental Oil Co. No. 1 State "A," C SW SW sec. 26-19-36. T.D. 3,795 ft.; set 5½-in. csg.

Continental Oil Co. No. 1 Sanderson "A," C E half NE NE sec. 10-20-36. Drlg. 2,525 ft.

Continental Oil Co. No. 2 Sanderson "A," C N half NW SE sec. 11-20-36. R.U.R.

Amerada Pet. Corp. No. 7 State "T," C NW SW sec. 28-19-37. T.D. 207 ft.; set 12½-in. csg.

Amerada Pet. Corp. No. 5 Andrews, C SW NW sec. 12-20-36. Drlg. 2,896 ft.

Gulf Oil Corp. No. 1 Theo. Anderson, C SW SE sec. 8-20-37. T.D. 3,818 ft.; set 5½-in. csg.

Stanolind O. & G. Co. No. 1 Gillully, C SW SW sec. 8-20-37. T.D. 308 ft.; set 12½-in. csg.

Shell Pet. Corp. No. 2 Cooper "B," C NW NW sec. 4-20-37. T.D. 3,899 ft.; flowed 395 bbls. in 3 hours.

Amerada Pet. Corp. No. 6 State "T," C NW NE sec. 20-19-37. Drlg. 2,581 ft.

Empire O. & R. Co. No. 3 Laughlin, C SE SE sec. 5-20-37. T.D. 2,405 ft.; set 9⅝-in. csg.

Ohio Oil Co. No. 6 Barber, C NW SW sec. 6-20-37. T.D. 1,108 ft.; set 9⅝-in. csg.

Anderson-Prichard Oil Corp. No. 5 Britt, C NE SW sec. 7-20-37. Drlg. 2,110 ft.

Anderson-Prichard Oil Corp. No. 6 Britt, C SE SW sec. 7-20-37. Drlg. 690 ft.

Gulf Oil Corp. No. 1 Graham-State "G," C SW SE sec. 17-19-37. Drlg. 1,280 ft.

Gulf Oil Corp. No. 3 Williams, C SE SE sec. 29-19-37. T.D. 1,342 ft.; set 7⅝-in. csg.

Ohio Oil Co. No. 7 Barber, C SW NW sec. 5-20-37. Drlg. 1,465 ft.

Anderson-Prichard Oil Corp. No. 1 Britt "B," C SE SW sec. 5-20-37. R.U.R.

Continental Oil Co. No. 1 Britt "B," C NE NW sec. 8-20-37. Rig.

Ennisbrook Oil Corp. No. 1 Wulff, NW cor. sec. 17-20-37. Spudded.

Phillips Pet. Corp. No. 1 Patsy, C NW NE sec. 18-20-37. Cellar and pits.

Humble O. & R. Co. No. 1 State "E," C NW SW sec. 21-19-37. Cellar.

Gulf Oil Corp. No. 1 Hatchett, C NW SW sec. 33-19-37. Rig up.

Skelly Oil Co. No. 1 Van Etten, C NW SW sec. 9-20-37. Cellar and pits.

Texas Co. No. 4 Cooper, C SE NE sec. 5-20-37. Moving in material.

Amerada Pet. Corp. No. 3 State "T," C SE NW sec. 25-19-36. Rig up.

Eunice Area

Continental Oil Co. No. 5-B-14 Lockhart, C NW SW sec. 14-21-36. Drlg. 3,566 ft.

Continental Oil Co. No. 4-D-15 State, C SW SE sec. 15-21-36. Drlg. 3,775 ft.

Continental Oil Co. No. 5-D-15 State, C SW NE sec. 15-21-36. Drlg. 3,365 ft.

Shell Pet. Corp. No. 2 State "A," NE cor. sec. 12-21-25. Drlg. 3,791 ft.

Jim Murray et al No. 3 Wallace, C SE SW sec. 3-21-36. T.D. 3,875 ft.; R.U.S.T. and cleaning out.

Gulf Oil Corp. No. 2 Orcutt "C," C NE NE sec. 6-21-36. T.D. 3,855 ft.; to acidize.

Gulf Oil Corp. No. 6 Orcutt, C SW NE sec. 6-21-36. T.D. 3,873 ft.; to reset packer.

Texas Pacific Coal & Oil Co. No. 2 State "A," Acct. 2, C NW SW sec. 5-22-36. T.D. 3,968 ft.; P.B. to 3,857 ft.; cleaning out.

Humble O. & R. Co. No. 6 State-Aggies, C SW NE sec. 31-20-37. T.D. 3,740 ft.; set 5½-in. csg.

Gulf Oil Corp. No. 1 L. White, C SE SE sec. 25-20-36. Drlg. 3,275 ft.

Gulf Oil Corp. No. 2 Bell-State "D," C SW SW sec. 6-21-36. T.D. 2,510 ft.; fishing.

Continental Oil Co. No. 6-D-15 State, C NE SE sec. 15-21-36. Drlg. 3,660 ft.

Empire O. & R. Co. No. 2 State "F," C NE SE sec. 30-20-37. Drlg. 3,004 ft.

Gulf Oil Corp. No. 4 Orcutt "C," C SE NW sec. 6-21-36. Rig.

Gulf Oil Corp. No. 3 Orcutt "C," C SW NE sec. 6-21-36. Drlg. 1,125 ft.

Amerada Pet. Corp. No. 4 Houston, C SW NE sec. 7-21-36. T.D. 238 ft.; set csg.

Atlantic Ref. Co. No. 4 State "L," C NW SW sec. 6-21-36. Drlg. 1,430 ft.

Humble O. & R. Co. No. 7 Knox, C SW NE sec. 10-21-36. Drlg. 2,998 ft.

Gulf Oil Corp. No. 5 Orcutt "C," C SE SE sec. 36-20-36. Rig.

Humble O. & R. Co. No. 7 State-Aggies, C NW NE sec. 31-20-37. Cellar and pits.

Getty Oil Corp. No. 1 State "D," C SE NE sec. 32-20-37. T.D. 229 ft.; set 10¾-in. csg.

Skelly Oil Co. No. 1 State "G," C NW SE sec. 30-20-37. Cellar and pits.

Shell Pet. Corp. No. 2 State "J," C SW SE sec. 32-20-37. Rig up.

Continental Oil Co. No. 17-B-4 Meyer, C NE NE sec. 4-21-36. Rig up.

Shell Pet. Corp. No. 2 State "G," C NW NW sec. 6-21-36. Moving in.

Gulf Oil Corp. No. 2 Molly Campbell, C NE SW sec. 7-21-36. Location.

Two States & Southern Pet. Ex. No. 1 McQuatters, C NW SE section 11-21-36. Location.

Two States & Southern Pet. Ex. No. 2 McQuatters, C SE NE sec. 11-21-36. Location.

Sims Area

Devonian Oil Co. No. 1 Christmas, NE NE SE sec. 28-22-37. T.D. 1,152 ft.; set 8⅝-in. csg.

Skelly Oil Co. No. 1 R. R. Simms "C," C SE SW sec. 3-23-37. Drlg. 1,240 ft.

Skelly Oil Co. No. 1 H. O. Simms "D," C SE NW sec. 3-23-37. Drlg. 3,170 ft.

Skelly Oil Co. No. 1 W. P. Simms "B," C NW NE sec. 10-23-27. Drlg. 1,880 ft.

Empire O. & R. Co. No. 1 Walden, C SE NW sec. 21-22-37. T.D. 3,350 ft.; fishing.

Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. T.D. 1,305 ft.; waiting on tools.

Continental Oil Co. No. 1-A-15 Elliott, SE SE SE sec. 15-22-37. T.D. 3,640 ft.; to acidize.

W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. Drlg. 1,150 ft.

Amon G. Carter No. 1 E. M. Elliott, sec. 22-22-37. Drlg. 420 ft.

J. E. Farrell No. 1 Walden "C," sec. 15-22-37. Drlg. 2,745 ft.

J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. T.D. 245 ft.; set 13-in. csg.

Skelly Oil Co. No. 1 G. W. Sims, sec. 10-23-37. T.D. 3,607 ft.; fishing.

Skelly Oil Co. No. 2 R. R. Simms, C NE SW sec. 3-23-37. Drlg. 1,042 ft.

Skelly Oil Co. No. 3 Baker, C NE NW sec. 27-22-37. Cellar and pits.

Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-36. T.D. 3,514 ft.; S.D. for orders.

Yingling Oil Co. No. 1-B-3 Vaughan, C SE NW sec. 3-24-36. Location.

Yingling Oil Co. No. 1-B-9 Vaughan, NE cor. sec. 9-24-36. Location.

Lea County—Miscellaneous

Continental Oil Co. No. 1 J. C. Farney "A," C SW SE sec. 5-23-36. Wildcat; drlg. 1,470 ft.

Plains Prod. Co. No. 3 J. A. E. Knight, C SE SE sec. 21-24-37. Drlg. 1,860 ft.

Shell Pet. Corp. No. 1 J. F. Black, C NW SE sec. 21-24-37. Drlg. 3,376 ft.

Plains Prod. Co. No. 4 Knight, C SW SW sec. 22-24-37. Cellar and pits.

Eppenauer Drlg. Co. No. 1 Stuart, NE NW NE sec. 22-25-27. 113 ft.; set 15½-in. csg.

Rowan et al No. 1 Mattern, C SW SE sec. 8-22-37. T.D. 3,789 ft.; swabbing and testing.

C. & G. Oil Co. No. 1 E. Weir, C NE NE sec. 14-20-37. T.D. 4,075 ft.; testing.

Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. T.D. 2,526 ft.; S.D.

Argo Royalty Co. No. 1 Lanehart, SW SE NE sec. 21-26-37. Drlg. 3,667 ft.

Stanolind O. & G. Co. No. 1 Langley, sec. 15-25-37. T.D. 3,413 ft.; P.B. to 3,381 ft.; to drill out to 3,413 ft.

Leonard No. 3 Lanehart, C NE NW sec. 21-25-37. Moving in material.

C. L. Carlock et al No. 1 Quincy-Ricker, C SE SE sec. 7-16-36. Wildcat; T.D. 2,010 ft.; set 10¾-in. csg

J. C. Clower No. 1 Turner, C SE SE sec. 29-21-37. T.D. 3,485 ft.; S.D.

Culberson-Irwin & Stovall No. 2 Stuart, NW SE SE sec. 10-25-37. T.D. 3,277 ft.; fishing.

Samedan Oil Co. No. 2 Hughes, C NW SE sec. 4-23-37. T.D. 1,080 ft.; fishing.

Continental Oil Co. No. 1-A-24 Sholes, C SE SE sec. 24-25-36. Drlg. 3,210 ft.

Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-38. Wildcat; drlg. 1,905 ft.

Baldridge and others No. 1 Blakely, C NW NE sec. 5-20-38. Wildcat; T.D. 2,815 ft.; standardizing.

Rushwold Oil Co. No. 1 Carter, C NW NE sec. 30-20-39. Wildcat; drlg. 970 ft.

Plains Prod. Co. No. 2 J. A. Knight, C NW SW sec. 22-24-37. Drlg. 3,315 ft.

Empire O. & R. Co. No. 1 S. Dabbs, C NW NW sec. 23-25-37. T.D. 3,361 ft.; to shoot.

Skelly Oil Co. No. 1-A Stuart, SW NE NE NW sec. 15-25-37. Drlg. 3,394 ft.; 2,500 ft. oil in hole.

Texas Co. No. 2 Sheppard "A," C SW NW sec. 6-26-37. T.D. 3,078 ft.; set packer at 3,000 ft.

Maxwell, Crandall & Osmond No. 1 Lane-State, C SW NW sec. 32-10-34. Wildcat; T.D. 2,175 ft.; set 10¾-in. csg.

Getty Oil Co. No. 1 Hardy, C SE SE sec. 20-21-37. T.D. 3,675 ft.; set 5½-in. csg.

Maljamar O. & G. Co. No. 7 Baish, C SE NW sec. 21-17-32. Drlg. 1,812 ft.

Continental Oil Co. No. 1 Rex William "A," C SW SW sec. 27-23-35. Wildcat; R.U.R.

Texas Co. No. 1 Young, SE cor. sec. 5-24-37. Drlg. 3,589 ft.; hole full of oil.

Texas Co. No. 1 Black, C SW NW sec. 21-24-37. Drlg. 2,300 ft.

Magnolia Pet. Co. No. 3 Carson, C SW SW sec. 28-21-37. Drlg. 2,590 ft.

Continental Oil Co. No. 1 Eaves "B," C SW NE sec. 30-36-37. Drlg. 2,074 ft.

Tide Water Oil Co. No. 1 Coates "B," C NW NW sec. 21-25-37. Drlg. 2,998 ft.
Amon G. Carter No. 2 Elliott, C NE NW sec. 22-22-37. R.U.R.
Magnolia Pet. Co. No. 1 State "G," NW NW NE sec. 24-17-34. Drlg. 1,859 ft.
Empire O. & R. Co. and Repollo Oil Co. No. 1 Brunson, NW NW SE sec. 4-22-37. Drlg. 860 ft.
Anderson-Prichard Oil Corp. No. 2 Carlson, C SW NW sec. 21-25-37. Drlg. 440 ft.
Shell Pet. Corp. No. 1 State "T," C SE NE sec. 34-20-35. Wildcat; moving in material.
Getty Oil Co. No. 2 Hardy, C SW SE sec. 20-21-37. Loc.
Texas Co. No. 1 V. M. Henderson, SE SE NE sec. 30-21-37. Loc.

Eddy County

Clint Murchisan and others No. 1 State "A," C NE SW sec. 16-17-31. Drlg. 1,725 ft.
Barnsdall Oil Co. No. 4 Dodd, C SE SE sec. 22-17-29. Drlg. 2,345 ft.
Fred Brainard No. 1 Berry, C E½ NW NW sec. 23-17-27. Drlg. 938 ft.
Tignor-Etz & Keys No. 5 Keys "A," C E½ SW SW sec. 10-17-38. Drlg. 1,190 ft.
Etz Bros. No. 3 State, sec. 16-17-30. Drlg. 3,252 ft.
Hammond et al No. 1 State, SW SE SW sec. 15-27-28. T.D. 1,967 ft.; to shoot.
Republic Prod. Co. No. 6 Russell, SW NE NW sec. 18-17-31. T.D. 3,535 ft.; to acidize.
William Dooley No. 1 Hatchett, NE SW NE sec. 11-20-26. Wildcat; T.D. 803 ft.; P.B. to 445 ft.; testing.
McGinley & Harwell No. 7 Mann, SW cor. sec. 4-18-27. Location.
Premier Pet. Co. No. 1 McIntyre "G," NW NW NE sec. 21-17-30. Drlg. 1,925 ft.
Flynn, Welch & Yates No. 75 State, C E½ SE SE sec. 10-19-28. Drlg. 400 ft.
Flynn, Welch & Yates No. 3 Gissler, SW SE SW sec. 14-17-30. Loc.
Flint Prod. Co. No. 1 Flint, SE SW SE sec. 14-17-30. Loc.

Harding County

Kahay No. 1 Dae Daca, C sec. 19-20n-31e. T.D. 1,702 ft.; S.D.
Clyde B. Neill No. 1 Foster, C NW SW sec. 27-21-30. S.D. 700 ft.

De Baca County

Mid-Continent Engineering Corp. No. 1 State, C NW SE sec. 27-4n-22e. T.D. 1,051 ft. in broken lime; S.D.

McKinley County

Claude Walker No. 2 fee, sec. 20-20n-9w. Drlg. at 100 ft.
Dave Stacey No. 1 Tee, C NW sec. 28-20-9w. Drlg. 90 ft.

Roosevelt County

Maxwell, Crandall & Osmond No. 1 Williamson, C NW NW sec. 7-8s-36e. Wildcat; T.D. 2,302 ft.; R.U.S.T.
Claudel Development Co. No. 2 Wilmes, C SE NE sec. 17-2s-30e. Wildcat; drlg. 568 ft.
Wirt Franklin and Flynn, Welch & Yates No. 1 Catts, C NW NW sec. 28-3n-30e. T.D. 2,957 ft.; set 8¼-in. csg.

Union County

Superior Oil Corp. and Olson Drlg. Co. No. 1 J. H. Zurich, SE SW sec. 2-21-34e. T.D. 2,925 ft.; in granite; S.D.

COLORADO

Adams County

Oklahoma Oil Co. No. 1 Baxter, C SW sec. 2-3s-66. S.D 4,368 ft. for 4-in. D.P.
Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. S.D. 4,267 ft.

Archuleta County

The William E. Hughes Estate No. 13 Gramps, at an unreported location in the Gramps pool, but believed to be in the NW quarter section 24-33n-2e, was completed at an unnamed depth after coring through the Dakota series to the top of the Morrison formation. Official figures give the production for the first 24 hours on a swabbing and pumping test at 1,920 bbls. The production was through the 8¼-inch casing set on top of the first Dakota pay sand. The sands both at the top and bottom were heavily saturated and there was no water.

Kiowa County

Gulf Oil Corp. No. 1 Riser-Union Pacific, C SW NE sec. 1-17s-50w. Drlg. 1,680 ft. in Dakota; top Dakota 1,453 ft.

Larimer County

Continental Oil Co. No. 8 Buckeye-U.P., C NE SW sec. 1-10s-68. T.D. 4,992 ft.; cut and pulled 6⅝-in. from 4,189 ft.; left 266 ft. in hole as liner; perforating and washing.

Moffat County

Colorado's new oil field, which has been anticipated for several weeks, was realized on November 23 when the Mountain Fuel Supply Co. No. 1 Carl Allen, NE SW SE section 32-12n-97, on the Powder Wash structure, in northern Moffat County, blew in as a producer and is estimated good for at least 1,000 to 1,500 bbls. per day.

The discovery is in the Lower Wasatch of Tertiary age. Total depth is 5,032 feet. The 8⅝-inch was cemented on top of the sand at 5,014 feet. Hole was bailed down to 1,800 feet when it began flowing by heads, making 85 bbls. the first 45 minutes and then decreasing until the third hour when it went over the derrick. The oil was accompanied by about 5,000,000 feet of gas. Elevation of the well is 6,678 feet. The oil is light, of paraffin base.

This is the second well drilled on the structure. The same company's No. 1 Musser, C NE section 5-11n-97, the gas discovery well, was completed in 1931 at 2,152 feet for 34,880,000 feet the first 24 hours in the Upper Wasatch. The two wells are half a mile apart. The gas discovery was about 2,000 feet higher in the geological column than the gas horizon at Hiawatha. The importance of the oil discovery is more than the opening of a new pool. It means that numerous structures in the Tertiary in the Rocky Mountain area which have been passed up in the past now become attractive for wildcatting. There are a number of these structures in western and northwestern Colorado as well as in Wyoming.

Mountain Fuel Supply Co. No. 1 Kuykendall, NE NE SE sec. 22-12n-100. T.D. 2,774 ft.; cmtg. off water sd. above oil sd. at 2,766-74 ft.
Morapas Pet. Co. No. 1 Cole, C SW SE sec. 1-3n-92. Rig up; bldg. winter camp.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 2,617 ft.; 10¾-in. at 2,609 ft.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. Cg. 5,340 ft.

Weld County

Continental Oil Co. No. 2 Briggs, C NE SW sec. 13-6n-61. T.D. 6,813 ft.; lost cir.; W.O. mud.

WYOMING

Albany County

California Co. No. 5 Holst, SE NE SE sec. 13-17n-77. Drlg. 1,104 ft.
Hal Blakeman No. 1 Chapple, C NE NW sec. 31-21-76. Drlg. 1,653 ft.
California Co. No. 1 Bath, NW NW SW sec. 4-16n-75. Drlg. 2,454 ft.
California Co. No. 6 Holst, CWL NE SE sec. 13-17n-77. R.U.

Big Horn County

Stock Oil Co. No. 1 Allen, Lot 52, sec. 32-46n-97. T.D. 3,825 ft.; on fire.
Stock Oil Co. No. 1-B Allen, Lot 52, sec. 32-46n-97. Drlg. 2,290 ft.; sdy. sh.
Ohio Oil Co. No. 1 Wiley, C NE NW sec. 25-56n-97. Drlg. 4,625 ft. in r.b.
Ohio Oil Co. No. 2 Smith, CWL NE SE sec. 32-56-97. Cg. 4,191 ft. in Madison; good sat.
Ohio Oil Co. No. 2 State, NE cor. Lot 38, sec. 36-46n-97. Drlg. 1,217 ft.
Taylor Oil Co. No. 1 Robinson, SW SW NW sec. 24-56n-97. Drlg. 2,950 ft.
Peay Oil Co. No. 1 Denio Hr., 43-C, sec. 15-55n-87w. Drlg. 3,998 ft.
Stock Oil Co No. 1 Griffin, Lot 60, sec. 4-55n-97. Cg. 4,167 ft.; barren lime streaks at 4,138-62 ft.
Peter Evanoff et al No. 1 McAllister, NW NE SE sec. 9-55n-87. S.D. 3,015 ft.; will run 8⅝-in. and go to Madison.
J. W. Bales No. 1 Parker, C SW SW sec. 23-49n-89w. Resumed; drlg. 950 ft.

Carbon County

The Ohio Oil Co. has a good completion in the Sundance sand in its No. 11 Harrison & Cooper, NE SW SW section 35-20n-78, in the Rock River field. Total depth is 3,210 feet. The 8¼-inch was cemented at 3,148 feet. It swabbed 872 bbls. the first 24 hours and 120 bbls. in the second period and then was pinched in to 30 bbls. per day.

Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78. Drlg. 1,800 ft. in Morrison.
General Pet. Corp. No. 1 Union Pacific, SW NW sec. 19-83w. Drlg. 5,260 ft. in Morrison.
Sinclair-Wyoming Oil Co. No. 10 Govt., SW SE NW sec. 7-26-89w. Drlg. 5,684 ft.

Fremont County

The Sinclair-Wyoming Oil Co. has been delayed by muddy roads, repairs, etc., in completing its No. 2-C Muskrat, an oil discovery, on the Muskrat dome where one well is producing gas. It is shut down at 7,293 feet and black oil has risen 3,000 feet in the hole since the plug was drilled after cementing the 7-inch at 7,265 feet. The pay is in the Embar. The bailer is stuck at 7,200 feet. After hole is cleaned out it will be acidized with 2,000 gallons.

C. E. Nelson No. 2 Enos, SW NE SW sec. 27-3n-1w. Drlg. 580 ft.
Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. Drlg. 2,890 ft.
Sinclair-Wyoming Oil Co., No. 2-C Muskrat, NE SW SW sec. 1-33n-92w. T.D. 7,293 ft.; bailer in hole; will fish out and acidize.

Goshen County

Ohio Oil Co. No. 1 Waggoner, C NE NE sec. 14-28-63w. Drlg. 2,345 ft. in intermittent streaks of barren lime.

Hot Springs County

Empire State Oil Co. No. 1 Larson, sec. 33-44n-93. Drlg. 1,815 ft.

Laramie County

Amerada Pet. Corp. No. 1 Morton, C SW SW sec. 13-13n-68. T.D. 7,052 (cor.) ft.; rm. to 6,110 ft. to set 11¾-in. on bottom.

Lincoln County

Place Oil Co. No. 36, SE sec. 9-26n-113. S.D. 30 ft.
Senrab Oil Corp. No. 3 Govt., CSL SE NW sec. 10-36n-113w. S.D. 1,020 ft.

Natrona County

Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78. Drlg. 418 ft.

Niobrara County

Argo Oil Co. No. 8 Elliott, C NW SE sec. 5-35n-65. Drlg. 2,482 ft.
Bay-Elwell No. 1 Joss, CSE SE NW sec. 1-34n-66w. Drlg. 1,980 ft.
Continental Oil Co. No. 2 Schuricht, SE SW NE sec. 6-35n-65. T.D. 4,068 ft.; cmtd. back to 4,008 ft. to drill by.
Continental Oil Co. No. 5-A Schuricht, C NW SW sec. 5-35n-65w. Cellar (first report).
Continental Oil Co. No. 2-A Dielman, NW NE NE sec. 7-35n-65. Drlg. 3,358 ft. sh.; Dakota 3,316-19 ft.
Adams Louisiana Co.-Bay Elwell No. 1 Saugh, C NW NE sec. 18-35n-65. Cg. 4,584 ft.; sd. at 4,546-64 ft.; W. sd. 4,564-84 ft.; top third Sundance 4,532 ft.
Holly Dec. Co. No. 1 Novick, NE SE SW sec. 6-35n-65. T.D. 3,591 ft.; cmtd. whipstock at 3,578 ft. to sidetrack D.P.
Lewis Gokel No. 1, NE SE NW sec. 31-35n-62w. Drlg. 970 ft.
J. M. Huber Corp. No. 2 Jose, NE NE SW sec. 6-35n-65. Drlg. 2,629 ft.
Ohio Oil Co. No. 5 Leo OPC-16, NW NW SW sec. 35-36n-65w. Dk. (first report); semiwildcat, ¾ mi. E of production.
Ohio Oil Co. No. 6 Putnam, C NW NW sec. 4-35n-65w. T.D. 4,015 ft.; rng. 7-in. to top basal Sundance at 4,008 ft.
Ohio Oil Co. No. 4 Rohiff, C SW NE sec. 32-36n-65w. T.D. 3,868 ft.; C.O. and testing in basal Sundance at 3,864-3,964 ft.
Riggs Oil Co. No. 2 Spaugh, SE SW SW sec. 32-34n-65w. S.D. 1,092 ft. for winter.
Chester Oil Co. No. 1 fee, NE NE NE sec. 14-38n-61. T.D. 940 ft.; fshg. U.R. lug.

Park County

General Pet. Corp. No. 1 Govt. NW NW NW sec. 33-47-100. Drlg. 3,316 ft.
Resolute Oil Co. No. 1 State, C NW SW sec. 16-57-101w. C.O. and testing after shooting Frontier at 8,440-55 ft.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. Drlg. 980 ft.

Sublet County

California Pet. Corp. No. 4-B, CWL NE NW sec. 34-27n-113. Drlg. 330 ft.; cmtd. 13-in. at 101 ft.; 15 sacks.

Sheridan County

Beaver Creek Oil Co. No. 1 Allison, SW SE sec. 15-55-85. Drlg. 3,200 ft.

Sweetwater County

Mountain Fuel Supply Co. No. 1 Cooper, C NW NE sec. 15-16n-104. Drlg. 2,177 ft.

MONTANA

Big Horn County

Daniels Pet. Co. No. 1 May, C SE SE sec. 13-1s-33e. Resumed with cable tools; drlg. 3,670 ft.

Cascade County

C. Leonard Smith No. 1 Smith-Schwingle, NE NE SW sec. 14-22n-2e. Saved as wtr. well at 210 ft.; skidded rig 25 ft. north.

Carbon County

East Bridge O. & G. Co. No. 1, CSL SE SE sec. 23-6n-23e. Drlg. 1,510 ft.
Ohio Oil Co. No. 1 Northern Pacific, SE NE SW sec. 11-7s-21. Cg. in Lakota at 5,772 ft.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW sec. 35-9s-23e. Drlg. 610 ft.; light gr. sh.

Fallon County

Montana-Dakota Utilities Co. No. 3 Smith No. 1, Unit 8, C NE NW sec. 8-4n-62e. Drlg. 4,260 ft.
Montana-Dakota Utilities Co. No. 2 Warren No. 1, Unit 5, C SW sec. 23-8n-59. Drlg. 4,886 ft.

Fergus County

Minnesota Co. No. 1 Fenholt, SE NW SW sec. 24-21n-18e. S.D. 1,100 ft.; tools still in hole.
Judith Operating Co. No. 2 Govt., NW NE sec. 5-22n-17e. T.D. 3,200 ft.; pulled 6¼-in.; U.R. 8⅝-in. to bot.
Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 20-2e-18e. S.D. 496 ft.; C.D.
Emmons et al No. 3, SE NE NE sec. 6-21n-18e. Drlg. 1,065 ft.

Glacier County

The Cut Bank field was again extended the past week when R. C. Tarrant No. 3 Reickhoff, C NE NE section 36-32n-6w, a wildcat 4½ miles south of the nearest producer in the Big Bend district came in at 3,072 feet, total depth, and swabbed 40 bbls. the first 14 hours. If this well proves to be a continuation of the productive shore line beds, rather than a separate pool, it will add approximately 6,000 acres to the proven area. It is 2½ miles southeast of H. R. Patterson No. 1 Chatterton, which marked a southwest extension a few weeks ago, and 4 miles southwest of the group of wells in section 17-32-5w.

The Tarrant extension had the Sunburst dry sand at 2,950-60 feet and the top of the Cut Bank section at 2,985 feet. The 7-inch was cemented at 3,015 feet, at which depth it picked up the first oil. The Ellis was topped at 3,063 feet. Oil stood 800 feet in the hole. The crude is approximately 30.5 gravity. Elevation is 3,716 feet.

Two other wells were completed in Cut Bank. The Texas Co. No. 4 Tribal-121, C NW SE section 36-33n-6w, swabbed 108 bbls. the first 24 hours at 3,031 feet, total depth, after a shot with 20 quarts. Sand record was given last week.

The Texas Co. No. 3 Tribal-121, C SE SE section 36-33n-6w, was completed at 3,037 feet and swabbed 93 bbls. the first nine and one-half hours from the pay at 3,020-33 feet. Top of the Cut Bank was at 3,012 feet and top of the Ellis at 3,033 feet; elevation 3,711 feet.

A. B. Cobb No. 2 All.-115, SE NE SE sec. 31-33n-5w. Drlg. 2,200 ft.
Drumheller Reservation Synd. No. 1 Tarrant, C SW SW

sec. 21-23n-6w. Drlg. 1,300 ft.; Colo. 685 ft.; 10¾-in. 727 ft.
Wm. Hanlon, Agt., No. 1 All.-128, C SE NE sec. 12-32n-6w. Pulled 8¼-in. and cmtd. back to 600 feet.
L. V. Hole No. 2 All.-124, C SW SE sec. 1-32n-6w. Drlg. 1,725 ft.
Jack Marshall No. 2 All.-119, C Lot 3, sec. 1-32n-6w. Drlg. 600 ft.; 10¾-in. cmtd. 360 ft.
Montana Power Gas Co. No. 3 Simero, C NE SE sec. 6-33n-5w. Cmtd. 7-in. at 2,787 ft.; drlg. plug.
Montana Power Gas Co. No. 1 Schuette, Unit 1, 2,640 ft. E of W line, 500 ft. S of N line, sec. 5-34n-5w. Drlg. in at 2,707 ft.; 5,000,000 ft. of gas at 2,700-07 ft.
Montana Power Gas Co. No. 1 Wallace, C NE SE sec. 5-32n-5w. Drlg. 655 ft.; Colo. 570 ft.; cmtd. 10¾-in. at 596 ft.
Pardee Drlg. Co. No. 2 Morrison, CEL NE SE sec. 24-33n-6w. Drlg. 750 ft.
R. C. Tarrant No. 7 Getty, SW SW NW sec. 2-34n-6w. Drlg. 2,910 ft.; 8¼-in. at 2,860 ft.; 800 ft. of oil.
Vern Johnson No. 1 Tribal-118, C SW SW sec. 1-32n-6w. S.D. 2,900 ft. for 8¼-in.
Texas Co. No. 6 Tribal-122, C NE SE sec. 6-32n-5w. Cg. 2,905 ft.; 500 ft. of oil.
Texas Co. No. 7 Tribal-122, 520 ft. S of N line, 461 ft. E of W line, Lot 9, sec. 5-32n-5w. Drlg. 2,841 ft.; 7-in. at 2,826 ft.
A. E. Wilkinson No. 2 All.-127, C SE NE sec. 1-32n-6w. T.D. 2,972 ft.; rng. 7-in.
A. E. Wilkinson No. 2 Tribal-126, NW NW NW sec. 7-32n-5w. Drlg. 2,625 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15w. S.D. 1,300 ft. (cor.).

Liberty County

Western Natural Gas Co. No. 2 Wallace, NW NW SW sec. 15-37n-4e. S.D. 1,800 ft. for winter.

Musselshell County

Geo. Gregory et al No. 24-A Govt., NW SW NW sec. 25-11n-24e. Drlg. 465 ft. in Quadrant.

Park County

Ben W. Ryan et al No. 1 Burges, SE SW NW sec. 28-2n-11e. Spdg. 200 ft.; 12½-in. at 100 ft. (first report).

Petroleum County

H. C. Rowland No. 1 Kalispel, NE NE SE sec. 35-14n-25e. Drlg. 610 ft.

Why Be Satisfied With a "Good" Method?

Why not use "The BEST"? Maybe your present method of water treatment does hold scale and corrosion down pretty well. But is it doing a complete job? Is it harmless to equipment, or persons? Does it produce clean steam —with no carry-over? Does it eliminate tube replacements and shutdowns? And is it the most economical to use?

Consider—

SAND BANUM

"The Entirely Different Boiler and Engine Treatment"

It always shows a greater efficiency record in all respects. It costs less—and does a better job! And it is so simple to use—it comes ready for use in 16 oz. cans, simply pour in a few ounces from one to four times per month. Scale and corrosion can't form, or remain, in the presence of this pure colloidal action.

BE SURE, use "The BEST"— it even costs less. Write for "HOW and WHY" today.

AMERICAN SAND-BANUM COMPANY, Inc.
1524 Canadian Pacific Bldg., New York City
Stocks carried by
Western Sand-Banum Company
Houston, Tex. . . Denver, Colo. . . Fresno, Calif. and at other convenient points.

Straighten Out... those CROOKED Holes *with* SPERRY - SUN Well-Surveying Instruments

Write for literature.

SPERRY-SUN WELL SURVEYING CO.
1608 Walnut St. Philadelphia, Pa.
Tulsa, Okla., 425 Petroleum Building
Houston, Texas, 3118 Blodgett Avenue
Long Beach, Calif., 549 East Bixby Road, (3800 Block—Atlantic Ave.)

Phillips County

R. C. Tarrant No. 1 Hartman, C NW SE sec. 12-24n-25e. Drlg. 600 ft.
Montana-Dakota Utilities Co. No. 1 Bell, NW SW NW sec. 8-32n-34e. Drlg. 100 ft. (first report).
City of Malta No. 1, C SE SE SE sec. 18-30n-30e. Drlg. 50 ft. (first report).

Pondera County

Clinch Pet., Ltd., No. 1 Holan, NW SW NW sec. 12-23s-6w. T.D. 2,200 ft.; rebldg. rig.
K. P. Pardee No. 1 Hughes, NW NE NW sec. 12-30n-4w. T.D. 2,350 ft.; rng. 5 3/16-in.
Kirk Oil Co. No. 1 Kellogg, SE NW NE sec. 31-28n-4w. Drlg. 1,875 ft.

Sheridan County

Cheyenne O. & G. Co. No. 1 Olson, SE SE SE sec. 14-35n-53e. S.D. 2,615 ft.; 500,000 ft. of gas 1,050 ft. and 500,000 ft. at 1,305 ft.; S.O. with 12½-in.

Teton County

R. C. Tarrant No. 1 Jones, C SE NW sec. 3-26-6w. M.I.M.

Toole County

Attempts of the Big West Oil Co. to make a producer out of a dry hole in its No. 4 Dalquist by acidization are continuing. It was treated with 4,000 gallons of acid in the Ellis-Madison at 1,828-38 feet, one of the largest doses used in Kevin-Sunburst field, but practically the entire load was recovered on account of the hard formation. After acidization it probably would pump 1 or 2 bbls. a day. It was then shot with 20, 20 and 100 quarts of nitro and will be acidized again with 1,000 gallons.

There were three completions, of which one was a small gas well and another a dry hole. O. E. Lee No. 1 Miller, C NE NE section 17-34n-3w, a test on the west flank, was dry and abandoned at 1,615 feet. The Ellis-Madison at 1,585 feet was dry, followed by water at 1,611-15 feet. The Sunburst was at 1,310-20 feet.

A. E. Crumley No. 7 Fryberger, CWL SE SE section 24-35n-3w, was completed at 1,575 feet and estimated at 15 bbls. per day. It had a show of oil in the Ellis-Madison at 1,550-58 feet, followed by water at 1,567-75 feet. It will be acidized.

Cassidy and others No. 5 Carlson, CNL SW NE section 22-35n-3w, was completed in the Sunburst at 1,425-50 feet for 100,000 feet of gas after plugging back from 1,805 feet.

Agen & Krause Co. No. 1 Krause, SE SE SE sec. 9-35n-3w. Loc.
Agen & Goeddertz No. 3 State, NE SW NE sec. 16-35n-3w. Drlg. 1,765 ft.; 200 ft. oil in hole.
B. A. S. Arnold No. 5 Govt., SE NW NW sec. 21-35n-3w. Drlg. 1,762 ft.
Big West Oil Co. No. 4 Dahlquist, NE NE NW sec. 21-35n-3w. T.D. 2,865 ft.; acidized without results; shot 100 qts. 1,828-38 ft.; re-acidizing.
Bryant Bros. No. 1 Lashbaugh, NW SE NW sec. 34-35n-2w. Drlg. 525 ft.
A. E. Crumley No. 11 Shaw, SE NW NE sec. 35-36n-2w. Drlg. 1,546 ft.
W. M. Fulton No. 1 Thompson, NW SW NE sec. 28-35n-3w. T.D. 220 ft.; rng. 12½-in.
Frazier & Smith No. 1 Van Note, CWL SW NW sec. 30-35n-2w. Drlg. 1,530 ft.
Shaver Oil Co. No. 1 Schaffer, SW SE NE sec. 11-34n-2w. Drlg. 220 ft.
Welch Bros. No. 2 Larum, SW SW NW sec. 25-35n-3w. S.D. 1,658 (cor.) ft.

NEBRASKA

Dawes County

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-32n-50w. Rng. 10¾-in. to 1,740 ft.

Redwillow County

C. W. Kelly et al No. 1 Bower, SE NW NE sec. 2-2n-29w. S.D. 1,450 ft.

UTAH

Daggett County

The Clay Basin gas field in the northeastern corner of Utah was extended half a mile to the northwest in the Dakota sand in the Mountain Fuel Supply Co. No. 1 State, NW SE SW section 16-3n-24e, which gauged 8,500,000 feet a day in the Dakota at 5,740-5,877 feet. It was drilled to 6,165 feet, in the Morrison, and plugged back. The Morrison at 6,120-65 feet was dry. Gas was discovered in this field in 1927 in the Producers & Refiners Corp. No. 2 Government, SW NW section 22-3n-24e, which was completed in the Frontier at 5,373-75 and at 5,395-5,412 feet for 3,276,000 feet under a pressure of 2,110 pounds. The structure was tested to 6,757 feet in 1935 by the Mountain Fuel Supply Co. in its No. 2 Murphy, NE NE section 21-3n-24e and encountered water in two benches of the Sundance. It was plugged back to the Dakota at 5,727-5,808 feet and completed for 32,000,000 feet a day.

Emery County

California Co. No. 1 Plain Unit, C SW SW sec. 22-23s-11e. T.D. 2,285 ft.; pumping wtr.; will standardize.

Grand County

Columbia Crude Corp. No. 1 Rath, NW SW SW sec. 12-25s-20e. Drlg. 1,712 ft.

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. Drlg. 5,679 ft.

Utah County

Diamond Oil Co. No. 4 Govt., CSL SE NW sec. 16-8s-5e. T.D. 4,900 ft.; fsg. bit.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e; dry, 1,920 ft.

Eastern Fields

(Continued from Page 64)

reached the Corniferous in the test on the Genevieve Minsker farm at 4,926 feet and is drilling 5 feet in. On the Maggie Given farm this company reached the Corniferous at 4,942 feet and is drilling at 4,950 feet. Godfrey L. Cabot, Inc., also reached the Corniferous in the test on the R. L. Bibby farm at 5,050 feet and is drilling at 5,069 feet.

In Loudin district, Kanawha County, Godfrey L. Cabot, Inc., reached the Corniferous in the test on the Marmet Coal Co. lease at a depth of 4,760 feet. This is an interesting test as it is south of the Coopers Creek field.

In Poca district, Kanawha County, the United Fuel Gas Co. reached the Corniferous in the No. 4,678 on the A. J. Bruen and others lease at 4,897 feet and is 9 feet in that formation. The United Carbon Co. is 63 feet in the Corniferous lime topped at 5,042 feet in the test on the S. H. Milam farm. The Brawley Reid Oil & Gas Co. is drilling at 4,762 feet in the test on the C. C. Fisher farm with the top of the Corniferous at 4,742 feet. In this district the West Virginia Gas Corp. has rigged up the test on the Victoria Landers farm.

In Calhoun County, Kenny M. Hunt and others have started drilling a test on the Claude Newell farm in Lee district. In Sheridan district the Metz Farm Oil Co. has started drilling a No. 3 on the Peter Metz farm.

In Marshall County, Wasmuth & Callahan has spudded in and started drilling a test on the Robert J. Powers farm in Clay district. F. J. Watson is drilling a No. 3 on the Joseph Loudenslager farm in Cameron district.

In Monongalia County the Clovis Brothers are building a rig for a test on the Benjamin Clovis farm on Kellom Fork in Battelle district. In Pleasants County, Dinsmoor & Co. have started drilling a No. 9 on the C. J. Hughes farm in McKim district.

In Ritchie County, W. H. Bickel is drilling a second test on the John Hyman farm in Murphy district. In Wayne County, Lusher & Lusher have a location for a No. 4 on the V. L. Lusher farm on Beech Fork in Union district.

In Wetzel County the Carnegie Natural Gas Co. has started drilling a second test on the Clarence Blatt farm in Proctor district. The previous well was an excellent gasser. In Wirt County, Glen Roberts and others has a location for a No. 6 on his own property in Burning Springs district.

Kansas Fields

(Continued from Page 62)

NW NW section 28-19-19w, was location for a wildcat in southwestern Rush County.

Lincoln County

Graham and others No. 1 Smiley, NE NW NW section 26-10-9w, wildcat in Lincoln County, was temporarily abandoned at 300 feet, total depth.

Scott County

Watchhorn & McNeely No. 1 Spangler, NW NW SW section 23-20-33w, southern Scott County, was dry and abandoned at 5,500 feet, total depth. It topped Mississippi at 4,755 feet and had a hole full of water at 5,080-86 feet.

Stevens County

Interstate Production Co. No. 1 Buddenburg, C NW section 26-33-39w, Hugoton area, Stevens County, produced 18,100,000 feet of gas and was completed at 2,655 feet, total depth. Stevens Oil & Gas Co. No. 1 Brown, C NW section 27-34-38w, had pay at 2,760-80 feet; total depth, 2,810 feet; produced 7,000,000 feet of gas and was completed.

New work in Stevens County: Panhandle Eastern Pipe Line Co. No. 1 Morgan, C NW section 27-33-39w, location; McNabb Oil & Gas Co. No. 2 Hallock, C SE section 36-33-39w, rigging up rotary.

Texas and Louisiana Gulf

By
F. L. SINGLETON

FIND PRODUCTION ON FLANK OF THE AGED ORANGE FIELD

HOUSTON, Tex., Nov. 30.—Opening flank production from a deep sand in the old Orange field in Orange County, and the prospects of possible extensions in three proven fields in Chambers, Refugio and Jefferson Counties were the most interesting developments along the Texas Gulf Coast, while in Coastal Louisiana operators were watching several deep tests which are nearing critical depths.

In the Anahuac field, Chambers County, Gulf Oil Corp. was preparing to test No. 1 Pommer, 4,000 feet east of production, after a 10-minute drill-stem test at 7,113-27 feet showed 6,500 feet of oil, with 100 pounds of pressure. Seven-inch casing was cemented on top of the sand at 7,120 feet. The well is situated south and east of Humble Oil & Refining Co.'s Boyt lease in section 46, and calls for several offsets to be drilled by Humble on the Drought lease to the south. North of the extension lease, Gulf Oil Corp. controls a full section. The company's No. 4 Knowles in section 48 has been completed for a gas well in a sidetracked hole at 7,175 feet.

One mile west of the Quintana-O'Connor field in Refugio County, Josey & Bruton's No. 1 M. F. Lambert is bottomed at 5,903 feet with 7-inch casing cemented at 5,888 feet preparatory to testing a series of sands which have shown indications of production. Hard sand was cored at 5,536-37 feet and sand and sandy shale with an oil odor was cored at 5,541-45 feet, where a five-minute drill-stem test at 5,536-45 feet tested gas with 300 pounds of working pressure and 55 feet of oil-cut mud. It is located in the O'Connor-Swisher Survey and is bottomed in the same sand that produces at Greta and Quintana-O'Connor.

Across the line in Victoria County, Magnolia Petroleum Co. No. 1 Willie Beck, in the T.&N.O. Survey, cored sandy shale with an oil odor at 3,509-12 feet and on a 7-minute drill-stem test at 3,498-3,512 feet tested gas with 200 pounds of working pressure and 240 feet of fluid, of which 50 per cent was oil and salt water. It is drilling ahead in shale below 3,894 feet.

Amelia Field

Humble Oil & Refining Co. No. 1 Phelan, 1,000 feet south of production in the Amelia field, Jefferson County, topped oil sand at 6,734 feet and is being tested at 6,781 feet, after 7-inch casing was cemented on bottom. This is the third well to be completed in that area, which is approximately 2,500 feet southwest of the main section of the field. To the north, in the West Beaumont field, Glenn H. McCarthy's No. 1-A Longe has been completed at 6,106 feet for an initial production of 526 bbls. McCarthy's No. 2-B Longe recovered 8 inches of oil sand in a core taken at 5,415 feet.

In the Nome field, Jefferson County, Shell Petroleum Corp.'s No. 2 Carpenter, in the M. E. Peveto Survey, flowed 497 bbls. of pipe line oil per day through an 8-inch choke, with tubing pressure 625 pounds and casing pressure 575 pounds, and the rig is being moved in for No. 2 Paggi, 2,293 feet east and 491 feet south of the northwest corner of the lease in the J. W. Kirby Survey.

The Fairbanks field, Harris County, received its third producer, and was extended a short distance to the south, by the completion of Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1-A Dopslauf, which flowed 41 bbls. of pipe line oil in four hours through a 11/164-inch choke, with working pressure on the tubing 2,000 pounds and shut-in casing pressure 2,150 pounds. The hole is bottomed in the Cockfield sand at a plugged back depth of 6,829 feet, and it was completed through perforated casing at 6,809-29 feet. It is a south offset to No. 1 Carpenter in the A. Fry Survey.

Open Flank Production

Turnbull and others No. 1 Lutcher Moore opened flank production on the north side of the Orange field, Orange County, when it flowed 15 bbls. of distillate per day through a quarter-inch choke, with tubing pressure 2,000 pounds and casing pressure 2,100 pounds. It is producing from the Heterostegina zone through perforated casing at 5,585-5,605 feet. Two previous tests made in the Marginulina and Frio horizons showed salt water.

On the south flank of the Clay Creek field, Washington County, Sun Oil Co. No. 1 Lauter was deepened to 7,470 feet, and swabbed and flowed 10 bbls. of oil in two hours. It is now shut in. The well has shown considerable pipe line oil on several tests made from 7,464 feet, but due to the lack of pressure it has failed to flow.

Sterling Oil & Refining Co. No. 1 South, Garwood area, Colorado County, is shut down after testing 160 feet of drilling mud on a 30-minute drill-stem test through perforated casing at 6,001-55 feet. It is in section 41, I.&G.N. Survey.

Blow Out at Magnet

P. B. Watson No. 1 Sweet, an offset to the discovery well of the Magnet field, Wharton County, blew out while the hole was being reamed preparatory to setting casing, and the rig has been moved from the location. This is the second time that the well has gotten out of control and as the hole has cratered, the operator will probably start a new test. The discovery well, Texas Crusader Oil Co. No. 1 H. C. Cockburn, which has been flowing through the casing, stopped flowing after 2½-inch tubing was run to 5,318 feet with a 4-foot perforated nipple on the bottom and a wall packer on the tubing set at 5,284-91 feet. The well had been making considerable salt water and the setting was made to shut of some of the water.

Stanolind Oil & Gas Co. No. 1 Candelari, the discovery well of the Clinton field, Harris County, has been flowing through a quarter-inch choke and has not shown any salt water. On a 24-hour gauge it flowed 52 bbls. of 47-gravity distillate and 5,490,273 feet of gas, with working pressure on the drill stem 3,500 pounds.

At the Cotton Lake field, Chambers County, Glenn H. McCarthy's No. 5 Kilgore flowed oil and salt water when tested at 6,309 feet, total depth, and the operators are making a cement squeeze job and will test through perforated casing at 6,292-98 feet.

Only two wildcat locations were announced for the district. In Brazos County, Jack Holter and others rigged up No. 1 Lewis Orando in the T. H. Hays Survey, while at the Needville Prospect, Fort Bend County, Sam Harrison is moving in a rig for No. 1 Victor Horak, located 330 feet out of the southeast corner of a 77-acre tract in the H.&T.C. Survey No. 36.

LOUISIANA

Along the Louisiana coast, attention was centered on Superior Oil Producing Co No. 1 Sevoie, on the Cankton Prospect in St. Landry Parish, which is drilling in shale below 8,382 feet after several cores taken from 7,940-8,380 feet are reported to have shown oil and gas. The well is located about a mile northeast of the Bosco field in section 26-8s-3e. The showings were encountered in the Heterostegina and Marginulina sand which compares favorably with the sands in the field proper.

On the Johnson Bayou Prospect, in the extreme southwestern part of Cameron Parish, Magnolia Petroleum Co. No. 1 Johnson Bayou encountered a section of heaving shale at 9,180 feet, and while trying to establish circulation, pressure began showing on the drill stem. The pressure, which is thought to be hydrostatic, was relieved by installing a one-half inch choke on the drill stem, and in 30 minutes the well cleaned itself, flowing clear hot salt water with 2,400 pounds of working pressure on the drill stem. At the Big Lake field the same company's No. 1 Raymond Labau, located north of the discovery well, is drilling shale below 8,300 feet.

North of the Houma gas field, Terrebonne Parish, Humble Oil & Refining Co. No. 1 H. J. Ellender is reaming after plugging back from a total depth of 8,378 feet to 8,235 feet. No showing of oil or gas has been reported. Location is in section 23-19s-19e.

Two of the district's most interesting wildcats are situated near the town of Abbeville in Vermilion Parish. Continental Oil Co. No. 1 O. C. Hebert, situated on the Abbeville Prospect, is drilling in sandy shale in a sidetracked hole below 11,479 feet and is only 300 feet from where it blew out several weeks ago after encountering 5 feet of gas sand. To the southeast, Stanolind Oil & Gas Co. No. 1 Stovall, at the intersection of the Intracoastal Canal with the Vermilion River in Township 14s-3e, is drilling in shale below 8,339 feet and is reported to be checking favorably.

One completion was reported for the Tepetate field in Acadia Parish and another was being tested. Continental Oil Co. No. 1 Ardoin in section 23 flowed 213 bbls. per day through a 5/32-inch choke with tubing pressure 1,200 pounds and casing pressure 1,000 pounds from a depth of 8,313 feet. Same company's No. 2-B Young in section 29 is being tested at a depth of 8,318 feet.

Cameron Meadows

At Cameron Meadows, Humble Oil & Refining Co. and Magnolia Petroleum Co. No. 18 Cameron, located in section 21-14s-13w, was completed at 3,613 feet for an initial production of 465 bbls. per day through a quarter-inch choke. Burton Sutton Oil Co. No. 15 School Land in section 16 is bottomed in sand at 3,345 feet and 7-inch casing was cemented at 3,323 feet.

Humble Oil & Refining Co. No. 5-B Devilbiss, bottomed in the deep pay at the Roanoke field in Jefferson Davis Parish, was completed through perforated casing at 8,841-43 feet, for an initial production of 24 bbls. per day through a quarter-inch choke with tubing pressure 950 pounds and casing pressure 550 pounds. Derrick is up for the same company's No. 3 Thomas, located 1,630 feet south and 2,507 feet west of the NE cor. of section 11-9s-4w.

One location was reported for the Jeanerette field in St. Mary Parish by the Herton Oil Co. for No. 3 Carter, located 412 feet north and 200 feet west of No. 1 in section 38-13s-9e. The company's No. 4 Roanoke is washing over stuck drill stem in a sidetracked hole at 5,745 feet.

Stanolind Oil & Gas Co. No. 1 Calcasieu National Bank, the discovery well of the South Roanoke field, Jefferson Davis Parish, is flowing 28 bbls. of 58 gravity distillate per day through a three-sixteenths inch choke with 3,210 pounds of working pressure on the tubing.

Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Nov. 30. — Operations in the new Bartelso pool, in Clinton County, southwest of Carlyle, Ill., suffered a setback when an effort to extend this shallow pool resulted in a failure. Ohio Oil Co., on the Philip Kleinekorte farm, in section 8, Santa Fe Township, Clinton County, drilled through the Trenton sand to a total depth of 1,118 feet without a show of oil or gas.

The Ohio Oil Co. is completing another well on the Trame farm, in the Bartelso district, as an offset to No. 1, and it is being cleaned out after having been shot with 20 quarts. This well was drilled through the sand at 997-1,017 feet and from all indications it will make a fair producer with conservative estimates placing it as a 75-bbl. well.

Major companies are still leasing and exploring in the central coal basin area and it is reported that seismograph soundings and core-drilling are showing favorable results for the majority of this territory. Although the major companies are reticent as to the exact conclusions they have drawn from their explorations, they continue to lease large blocks and that in itself seems to indicate that the possibilities of finding oil in the basin area are considered very good. Activity in the basin area is centered in Clay, Marion, Jasper, Cumberland, Christian and Fayette counties at present.

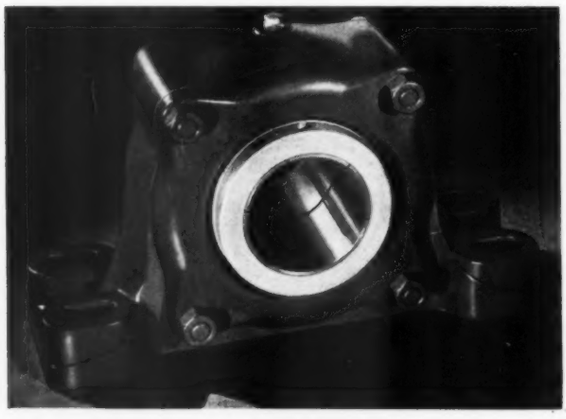
The Carter Oil Co. is still very active in this section and has recently secured leases in a strip of land, 12 miles wide, along the west county line of Effingham, and the eastern line of Fayette County, which extends from Farina to Mode, and is being extended to Pana, in Christian County. The Texas Co., Shell Petroleum Corp. and Sinclair are also leasing and exploring in Effingham and Fayette counties, but to date no drilling operations have been started in these counties. Work is expected to start early in the spring, however, and contracts, already let for these deep tests, indicate that they will be drilled to a depth of between 5,000 and 7,000 feet.

For Real Economy—

LINK-BELT

Anti-Friction and Babbitted Bearing

TRANSMISSION UNITS



● For lower power consumption, longer life of bearing, better appearance, less lubrication, minimum maintenance expense, Link-Belt offers you a complete line of anti-friction and babbitted streamlined bearings (pillow blocks, hangers, take-ups, etc.) for the free-turning of shafts. Send for 208-page Catalog No. 1500. Address Link-Belt Company, 2410 W. 18th St., Chicago; Philadelphia; Los Angeles; New York; Dallas; Houston; or Oklahoma City (W. H. Abele, Box 305, Route 4).

5885

KENTUCKY FIELDS

Two attempts to extend the Livermore pool, in McLean County, this past week, also failed to add any producing territory to that field and defined the eastern boundary of this pool. The first test was drilled by Clark & Snyder, on the E. Price property, on the east town limits of Livermore, with no showing of oil or gas. The other failure was drilled by the B. B. Oil Co. on the Straud farm, 500 feet across Green River from Livermore. Two other dry holes were reported in the Livermore pool. On the corner of Main and Sixth Streets, Sunflower Oil Co. No. 1, on the Judge Newton property, was a failure and on the First Baptist Church property, adjoining the Judge Newton lot, Major Oil Co. No. 1 was a duster.

W. E. Hupp & Co. No. 4 A. M. and M. D. Hatekett was the largest new producer reported in the past week in the Livermore pool. It had a production of 120 bbls. the first 24 hours, after a shot. On the H. L. Downs lot, Troy Refining Co. No. 1 had an initial production of 35 bbls. J. C. Ellis completed No. 14 on the Otto Howard property, with an initial production of 40 bbls. On the C. Carmen lot, Lion Oil Co. No. 1 also had a flush production of 40 bbls. Barrett & Helt No. 1 on the A. and M. Hatckett property started at 50 bbls.

In Ohio County, in the Dundee pool, Kentucky Natural Gas Co. No. 2 Alex Whitehouse had a production of 30 bbls. the first 24 hours after a shot. In the same pool, Henry Scholl completed No. 4 R. F. Coppage farm as a 12-bbl. producer. In the Deanfield pool, Cane Run Petroleum Co. No. 14 A. F. Bellamy was a commercial gas well.

INDIANA FIELD

No completions were reported in the Indiana fields this past week and a decline in operations is apparent. In Posey County, section 14, Black Township, Jasper C. Ellis is down 1,770 feet on Edward & Rachel Stein property.

In Spencer County, section 28, Luce Township, P. M. McMahan & Co. is drilling on the John E. Stephenson farm, and in section 14, Huff Township, J. S. Albertson was drilling No. 8 Arthur Ray below 700 feet. In the same township, Ed Lorch was spudding for No. 8 on his own property in section 12.

In Randolph County, section 9, Jackson Township, E. G. Henderson is drilling on the J. E. Conklin farm and in Ripley County, section 5, Jackson Township, T. E. Castor is drilling on the Oscar Hughes property.

Loyd & Parker is down 350 feet on the No. 2 Elmore Blann, in section 13, Busseron Township, Knox County.

CENTRAL OHIO

Operations in the Central Ohio field continue to increase and 21 new locations were staked during the past week. The majority of these locations were staked for gas and all of them are in more or less proven territory. A review of completions for the past seven days, shows 16 gas wells, 10 dry holes and two oil producers with a total new production of 53 bbls.

The Ohio Fuel Gas Co.'s deep test on the B. R. Carotheral farm, in section 22, Clay Township, Tuscarawas County, is causing quite a bit of comment in this section and if it should prove successful it will undoubtedly lead to deeper drilling in that area. At last report this test was drilling in slate at 5,255 feet, and has not made a showing of oil or gas since drilling through the Berea sand at 1,189 feet, where it made a small showing of oil and gas. The same company completed a commercial gas well on the Katherine Belden property, in section 14, Sandy Township, total depth 4,845 feet, in Red sand. Ohio Fuel Gas Co. also completed a commercial gas well on the G. Barthlome farm in section 4, Wayne Township, in Clinton sand at 4,294 feet.

In Cuyahoga County, Cleveland Township, L. F. McGrath No. 1, Bradford & Averill, was completed below the Newburg at 2,375-2,401 feet and gauged 8,000 feet of gas. In Newburg Township, Lot 306, National Smelting Co. is drilling on a subdivision property and has staked a location on the J. H. Breck property, in the same lot. In Tract 3, Olmsted Township, Ohio Fuel Gas Co. has staked a location on the Michael Surman property and is rigged up on the J. W. Ohmes property in the same tract.

The Ohio Fuel Gas Co. completed a commercial gas well on the Wade Welch farm, in section 18, Jackson Township, Ashland County. In section 33, same township, the same company's No. 2 M. Stanislawski was drilled through the Berea sand at 723-64 feet and has been plugged after making a show of oil. Ohio Fuel Gas Co. No. 1 Martha Crumlick, in section 22, Mohican Township, was completed below the Clinton at 2,823-36 feet and is a small gas well.

In Holmes County, section 31, Ripley Township, Ohio Fuel Gas Co. No. 1 E. E. Lozier was drilled through the Clinton at 3,149-61 feet without a show of oil or gas and has been abandoned. In section 6, Richland Township, Ohio Fuel Gas Co. No. 2 Albert Burkey was also a duster, in the same sand.

Preston Oil Co. No. 1 I. Underwood in section 16, Perry Township, Coshocton County, was completed below the Clinton sand at 3,155-79 feet and gauged 1,960,000 feet of gas.

In Lorain County, Lot 81, Columbia Township, Ohio Fuel Gas Co. No. 1 Charles Schultz was a commercial gas well and the same company has staked a location on the George Arnold farm in Lot 140, Pittsfield Township. In section 11, Avon Township, William Dempsey is moving a rig on location on the John Snyder property and in section 21, Edson & Son are rigged up for No. 3 on the Reuben Chester farm.

Long Producing Co. No. 5, William Varner, in section 14, Fallsbury Township, Licking County, was completed below the sand at 2,996-3,038 feet and had an initial production of 53 bbls. after a shot. In section 20, Hanover Township, E. H. Everett Co. has abandoned No. 15, on the F. Montgomery farm as a dry hole. In section 17, same township, Pure Oil Co. is building a rig for No. 4, on the B. G. Nethers property. In section 4, Maryann Township, Gail Earley No. 5, George Wilson, made 5 bbls. the first 24 hours after a shot. Rutledge & Mosholder, are down 300 feet on the No. 4, William Teagarden, in section 14, Perry Township, and the same operators are down 200 feet on the No. 5, William Teagarden. Wehrle

(Continued on Page 92)

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status:
Shell Oil Co., No. 16 Capitan, Santa Barbara Co.	32- 5-30	2,487	P.B. 2,360
General Pet. Corp., No. 21 Capitan, Santa Barbara Co.	32- 5-30	1,690	O.S. drlg.
Associated Oil Co., No. 1 Capitan, Santa Barbara Co.	2- 4-30	1,700	rd. sh. drlg.
Barnsdall-Rio Grande, No. 2 Elwood, Santa Barbara	15- 4-29	6,492	tested wet
Signal Oil Co., No. 8 Elwood, Santa Barbara Co.	tideland	3,853	pmp. 987 b.d.
101 Oil Co., No. 1 Pt. Concepcion, Santa Barbara Co.	35- 5-33	1,264	sd. sh. drlg.
Bush Oil Co., No. 3 Santa Maria, Santa Barbara Co.	30-10-33	4,598	hd. sh. drlg.
Field Gasoline Corp., No. 1 Santa Maria, Santa Barbara	21- 9-33	5,025	gr. sd. drlg.
Apache Oil Co., No. 1 Santa Maria, Santa Barbara Co.	31- 9-33	4,996	br. sh. drlg.
Macrate, A. N., No. 1 Santa Maria, Santa Barbara Co.	23-10-34	2,554	pmp. 180 b.d.
Echo Oil Co., No. 1 Santa Maria, Santa Barbara Co.	23-10-34	1,640	cmtd. 1,635
Union Oil Co., No. 11 Santa Maria, Santa Barbara Co.	25-10-34	3,629	sd. sh. drlg.
Union Oil Co., No. 16 Orcutt, Santa Barbara Co.	26- 9-34	3,242	br. sh. drlg.
Todos Santos Oil Co., No. 1 Casmalia, Santa Barbara	29- 9-34	2,364	bailing
Barnsdall Oil Co., No. 2 Los Alamos, Santa Barbara	9- 8-32	1,776	sd. sh. drlg.
Moore, Inc., No. 1 Santa Maria, Santa Barbara Co.	25-10-35	8,021	reaming
Top Row Oil Co., No. 1 Lompoc, Santa Barbara Co.	10- 6-35	1,332	idle
Rio Grande Oil Co., No. 6 Mesa, Santa Barbara Co.	28- 4-27	2,094	bailing
Dietzman, J., No. 1 Carpenteria, Santa Barbara Co.	8- 4-25	1,025	rigging up
Calken Pet. Co., No. 1 Sespe, Ventura Co.	23- 5-20	493	cmtd. 455
Union Oil Co., No. 10 Bardsdale, Ventura Co.	12- 3-20	6,561	cleaning out
Merchants Pet. Co., No. 7 Sespe, Ventura Co.	1- 4-20	271	hd. sd. drlg.
Petroleum Securities, No. 4 Shiells, Ventura Co.	3- 3-19	2,795	hd. sh. drlg.
El Rancho Oil Co., No. 1 Sespe, Ventura Co.	9- 3-19	4,990	idle
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,380	P.B. 1,175
Topa Topa Oil Co., No. 1 Sespe, Ventura Co.	33- 5-19	3,097	sd. sh. drlg.
Wasibi Oil Co., No. 1 Sespe, Ventura Co.	33- 5-19	1,200	hd. sh. drlg.
Oil Ridge Oil Co., No. 1 Hopper Canyon, Ventura Co.	6- 4-18	2,772	pmp. wtr.
Bolsa Chica Oil Co., No. 4 Temescal, Ventura Co.	4- 4-18	3,843	sd. sh. drlg.
Pacific Western Oil Co., No. 7 Temescal, Ventura Co.	4- 4-18	1,560	sd. sh. drlg.
Associated Oil Co., No. 1 Wiley Canyon, Ventura Co.	6- 3-18	1,775	rd. sh. drlg.
Rennie Bros., No. 1 Santa Paula, Ventura Co.	21- 4-21	1,040	pmp. 30 b.d.
Munding, J. J., No. 1 Ojai, Ventura Co.	22- 4-22	1,020	br. sh. drlg.
Ventura Expl. Co., No. 1 Saticoy, Ventura Co.	30- 3-22	9,525	idle
Vaca Oil Co., No. 1 Oxnard, Ventura Co.	6- 1-21	2,822	bailing
Continental Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	2,651	hd. sd. drlg.
General Pet. Corp., No. 1 Padre Canyon, Ventura Co.	15- 3-24	4,917	cmtd. 4,800
Continental Oil Co., No. 2 Padre Canyon, Ventura Co.	15- 3-24	5,759	flow. 230 b.d.
C. C. M. Oil Co., No. 2 Padre Canyon, Ventura Co.	23- 3-24	3,790	sd. sh. drlg.
Honolulu Oil Corp., No. 1 South Mountain, Ventura Co.	23- 3-21	4,951	gr. sd. drlg.
Calco Pet. Corp., No. 4 South Mountain, Ventura Co.	17- 3-20	2,198	sd. sh. drlg.
Associated Oil Co., No. 27 Hartman, Ventura Co.	22- 3-22	2,996	hd. sh. drlg.
Associated Oil Co., No. 12 McGonigle, Ventura Co.	23- 3-23	9,750	hd. sd. drlg.
Associated Oil Co., No. 25 V.L.W. Ventura, Ventura Co.	23- 3-23	7,055	rig. to pmp.
Associated Oil Co., No. 30 V.L.W. Ventura, Ventura Co.	24- 3-23	6,872	flow. 902 b.d.
Associated Oil Co., No. 28 Lloyd Ventura, Ventura Co.	27- 3-23	5,761	hd. sd. drlg.
Associated Oil Co., No. 78 Lloyd Ventura, Ventura Co.	27- 3-23	2,397	sd. sh. drlg.
Shell Oil Co., No. 88 Taylor Ventura, Ventura Co.	30- 3-23	7,400	fish. D.P.
General Pet. Corp., No. 17 Barnard Ventura, Ventura	23- 3-23	4,685	hd. sd. drlg.
General Pet. Corp., No. 13 Notten Ventura, Ventura Co.	23- 3-23	9,510	cleaning out
Den Pet. Co., No. 1 Devils Den, Kern Co.	20-25-19	1,360	sd. sh. drlg.
Associated Oil Co., No. 6-L-3 Lost Hills, Kern Co.	2-26-20	2,253	P.B. 1,520
Texas Co., No. 1 Lost Hills, Kern Co.	11-26-20	1,958	pmp. wtr.
Woodward, Hoke, No. 6 McKittrick, Kern Co.	11-30-21	1,317	cmtd. 960
Bergman, H. L., No. 1 McKittrick, Kern Co.	30-30-22	2,013	P.B. 1,700
Continental Oil Co., No. 1 Wasco, Kern Co.	8-27-24	5,672	sd. sh. drlg.
Associated Oil Co., No. 5 North Belridge, Kern Co.	34-27-20	8,520	will deepen
Belridge Oil Co., No. 12-1 North Belridge, Kern Co.	1-28-20	6,796	sd. sh. drlg.
Belridge Oil Co., No. 14-35 North Belridge, Kern Co.	35-27-20	1,775	sd. sh. drlg.
Belridge Oil Co., No. 15-35 North Belridge, Kern Co.	35-27-20	6,365	hd. sd. drlg.
Belridge Oil Co., No. 5-1 North Belridge, Kern Co.	1-28-20	8,100	hd. sh. drlg.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	8,441	cleaning out
National Oil Co., No. 5 Grau Kern Front, Kern Co.	11-28-27	1,838	P.B. 1,715
National Oil Co., No. 4 Provident Kern Front, Kern Co.	11-28-27	1,848	rig. to pmp.
Honolulu Oil Corp., No. 69 Kern Front, Kern Co.	8-28-27	2,870	pmp. 120 b.d.
American Expl. Co., No. 2 Kern Front, Kern Co.	16-28-27	2,868	cmtd. 2,825
Italo Pet. Corp., No. 35 Kern Front, Kern Co.	16-28-27	2,762	sd. sh. drlg.
Kaime, A. M., No. 1 Kern Front, Kern Co.	17-28-27	2,895	pmp. 78 b.d.
General Pet. Corp., No. 15 Kern Front, Kern Co.	14-28-27	1,986	O.S. drlg.
Bell Corp., No. 3 McVan, Kern Co.	14-27-27	1,360	will cmt.
Cal. Western Oil Co., No. 2 McVan, Kern Co.	23-27-27	1,178	rig. to pmp.
Harp, E. J., No. 1 Dominion, Kern Co.	27-26-28	1,434	pmp. 20 b.d.
Ring Oil Co., No. 1 Dominion, Kern Co.	28-26-28	1,522	rig. to pmp.
Shell Oil Co., No. 30 Vedder Mount Poso, Kern Co.	9-27-28	1,675	pmp. 374 b.d.
Petroleum Securities, No. 2 Mount Poso, Kern Co.	34-27-28	1,254	sd. sh. drlg.
C. C. M. Oil Co., No. 3 Dorsey Mount Poso, Kern Co.	26-27-28	1,532	P.B. 1,520
Cal-Coast-Apex Oil Co., No. 1 Mount Poso, Kern Co.	36-26-27	2,552	br. sh. drlg.
Doyle Pet. Co., No. 1 Jasmine, Kern Co.	15-25-27	2,882	pumped dry
Elbee Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,805	P.B. 3,620
Western Gulf Oil Co., No. 34 Fruitvale, Kern Co.	22-29-27	3,672	sd. sh. drlg.
Western Gulf Oil Co., No. 35 Fruitvale, Kern Co.	21-29-27	4,075	sd. sh. drlg.
Miami Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	4,070	redrlg. 4,065
Bilgrad Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	4,121	P.B. 4,045
Higgins, W. F., No. 1 Fruitvale, Kern Co.	21-29-27	4,176	cmtd. 4,040
Linderman Oil Corp., No. 1 Fruitvale, Kern Co.	28-29-27	4,333	P.B. 4,248
Tarr & McComb, No. 4 Fruitvale, Kern Co.	23-29-27	1,530	sd. sh. drlg.
Stanford Oil Co., No. 1 Fruitvale, Kern Co.	28-29-27	510	sd. sh. drlg.
Hope Oil Co., No. 1 Kern River, Kern Co.	8-29-28	1,540	sd. sh. drlg.
Associated Oil Co., No. 11 Kern River, Kern Co.	34-28-28	541	sd. sh. drlg.
Trico O. & G. Co., No. 1 Mountain View, Kern Co.	13-30-28	2,981	sd. sh. drlg.
Hogan Pet. Co., No. 19 Mountain View, Kern Co.	5-31-29	6,168	fish. liner
Hogan Pet. Co. No. 20 Mountain View, Kern Co.	4-31-29	5,251	form. test
Hogan Pet. Co., No. 21 Mountain View, Kern Co.	29-30-29	5,398	sd. sh. drlg.
Sheldon Oil Co., No. 2 Mountain View, Kern Co.	19-30-29	5,685	pmp. 190 b.d.
Standard Oil Co., No. 34 Mountain View, Kern Co.	13-30-28	1,772	sd. sh. drlg.
Hancock Oil Co., No. 10 Mountain View, Kern Co.	14-30-28	4,483	sd. sh. drlg.
Mid-State Oil Co., No. 1 Mountain View, Kern Co.	19-30-29	4,600	reaming
Mohawk Pet. Co., No. 3 Mountain View, Kern Co.	30-30-29	7,297	deep test
Wood-Callahan Oil Co., No. 2 Mountain View, Kern Co.	24-30-28	4,782	sd. sh. drlg.
East Edison Oil Co., No. 1 Edison, Kern Co.	23-30-30	1,035	swab, wtr.
Mohawk Pet. Co., No. 2 Arvin, Kern Co.	10-31-29	6,166	recmtd. 6,070
General Pet. Corp., No. 1 Arvin, Kern Co.	26-31-29	7,365	sd. sh. drlg.
Shell Oil Co., No. 1 Arvin, Kern Co.	15-31-29	6,171	P.B. 6,013
Arkelo Oil Co., No. 1 Lerdo, Kern Co.	23-28-26	6,263	sd. sh. drlg.
Associated Oil Co., No. 1 Rio Bravo, Kern Co.	30-29-25	7,683	reaming
Standard Oil Co., No. 11-1 Rio Bravo, Kern Co.	19-29-26	7,707	sd. sh. drlg.
Shell Oil Co., No. 1-7 Olcese Round Mountain, Kern Co.	17-28-29	1,840	pmp. 131 b.d.
Shell Oil Co., No. 11 Freeman Round Mountain, Kern	20-28-29	1,720	pmp. 305 b.d.
Shell Oil Co., No. 16 Caldwell Round Mountain, Kern	7-28-29	1,505	pmp. 672 b.d.
Bender, E. A., No. 1 San Emidio, Kern Co.	14-10-23	1,236	P.B. 900
Standard Oil Co., No. 9-1 Ten Section, Kern Co.	34-30-26	8,096	sd. sh. drlg.
Standard Oil Co., No. 10-1 Ten Section, Kern Co.	20-30-26	8,620	br. sh. drlg.
Shell Oil Co., No. 34 Ten Section, Kern Co.	29-30-26	761	sd. sh. drlg.
Ohio Oil Co., No. 1-E Ten Section, Kern Co.	19-30-26	8,752	hd. sh. drlg.
Superior Oil Co., No. 8 Ten Section, Kern Co.	11-30-26	7,272	gr. sh. drlg.
C. C. M. Oil Co., No. 21-21 Midway-Sunset, Kern Co.	21-32-23	2,379	bailing
C. C. M. Oil Co., No. 24-21 Midway-Sunset, Kern Co.	21-32-23	1,554	sd. sh. drlg.
C. C. M. Oil Co., No. 1-J Midway-Sunset, Kern Co.	21-32-23	1,486	br. sh. drlg.
Twentieth Century Oil Co., No. 1 Midway-Sunset, Kern	1-11-24	2,871	sd. sh. drlg.
Berry Oil Co., No. 23 Midway-Sunset, Kern Co.	28-12-24	885	O.S. drlg.
Associated Oil Co., No. 7 Midway-Sunset, Kern Co.	35-31-22	1,235	cleaning out
Gibson Oil Co., No. 6 Midway-Sunset, Kern Co.	6-11-23	1,650	sd. sh. drlg.
Sheppard Oil Co., No. 1 Midway-Sunset, Kern Co.	12-11-24	3,797	sd. sh. drlg.
Standard Oil Co., No. 21-15-D Midway-Sunset, Kern Co.	15-32-24	3,610	test W.S.O.
Goldman, Frank, No. 4 Midway-Sunset, Kern Co.	22-32-23	1,751	br. sh. drlg.
McGray, Ralph, No. 1 Midway-Sunset, Kern Co.	22-32-23	1,171	sd. sh. drlg.
Five Points Oil Co., No. 2-2 Midway-Sunset, Kern Co.	18-11-23	1,020	sd. sh. drlg.
Dunlap, D. D., No. 1 Midway-Sunset, Kern Co.	15-32-23	2,550	cmtd.
Texas Co., No. 17 Midway-Sunset, Kern Co.	32-32-24	1,672	sd. sh. drlg.
Pomoc Oil Co., No. 8 Midway-Sunset, Kern Co.	15-32-23	2,752	pmp. 38 b.d.
Union Oil Co., No. 1 Midway-Sunset, Kern Co.	7-11-23	1,801	pmp. 167 b.d.
Union Oil Co., No. 2 Williams Midway-Sunset, Kern Co.	22-32-23	2,000	sd. sh. drlg.
Birch-Ranch Oil Co., No. 1 Midway-Sunset, Kern Co.	22-32-23	2,142	P.B. 2,094
Jerman, R. W., No. 1 Midway-Sunset, Kern Co.	17-31-23	5,000	sd. sh. drlg.
North American, No. 4 Midway-Sunset, Kern Co.	2-32-24	4,062	cmtd. 3,925
Honolulu Oil Corp., No. 6 Midway-Sunset, Kern Co.	14-32-24	3,570	fish. liner
Honolulu Oil Corp., No. 16 Midway-Sunset, Kern Co.	14-32-24	3,430	cmtd. 3,016
St. Helens Pet. Co., No. 1 Midway-Sunset, Kern Co.	22-32-24	3,490	sd. sh. drlg.
Reserve O. & G. Co., No. 33-1 Tejon, Kern Co.	33-11-19	6,032	P.B. 5,086
Reserve O. & G. Co., No. 33-2 Tejon, Kern Co.	33-11-19	4,518	redrlg. 4,495
Hall-Baker Co., No. 1-10 Tejon, Kern Co.	12-11-19	520	sd. sh. drlg.
Ohio Oil Co., No. 2 Tejon, Kern Co.	21-11-19	5,232	form. test
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	8,527	reaming
Mohawk Pet. Co., No. 1 Cantua, Fresno Co.	30-16-15	5,940	sd. sh. drlg.
Etheridge Oil Co., No. 1 Iowa Kettleman North, Fresno	27-21-17	2,876	idle
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	9,060	redrlg. 8,999
K. N. D. A., No. 25-20-J Kettleman North, Fresno Co.	20-21-17	6,761	br. sh. drlg.
K. N. D. A., No. 21-30-J Kettleman North, Fresno Co.	30-21-17	8,849	gr. sd. drlg.
K. N. D. A., No. 52-30-J Kettleman North, Fresno Co.	30-21-17	7,900	cmtd. 7,899
K. N. D. A., No. 58-28-J Kettleman North, Fresno Co.	28-21-17	7,945	redrlg. 7,785
K. N. D. A., No. 63-28-J Kettleman North, Fresno Co.	28-21-17	8,480	fish. D.P.
K. N. D. A., No. 83-24-H Kettleman North, Fresno Co.	24-21-16	8,935	P.B. 8,882
K. N. D. A., No. 81-32-J Kettleman North, Fresno Co.	32-21-17	5,741	br. sh. drlg.
K. N. D. A., No. 85-32-J Kettleman North, Fresno Co.	32-21-17	6,973	br. sh. drlg.
K. N. D. A., No. 52-34-J Kettleman North, Fresno Co.	34-21-17	7,390	hd. sd. drlg.
K. N. D. A., No. 72-34-J Kettleman North, Fresno Co.	34-21-17	8,150	cmtd.
K. N. D. A., No. 47-2-P Kettleman North, Kings Co.	2-22-17	7,085	P.B. 6,480
Standard Oil Co., No. 32-19-J Kettleman North, Fresno	19-21-17	8,836	cmtd. fish
Standard Oil Co., No. 72-19-J Kettleman North, Fresno	19-21-17	8,820	flow. 750 b.d.
Standard Oil Co., No. 85-19-J Kettleman North, Fresno	19-21-17	6,097	sd. sh. drlg.
Standard Oil, No. 46-13-H Kettleman North, Fresno	13-21-16	8,810	cmtd. 8,807

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Standard Oil Co., No. 54-1-U Kettleman North, Kings	1-23-18	9,675	P.B. 8,260
Standard Oil Co., No. 48-35-J Kettleman North, Kings	35-21-17	8,018	hd. sd. drlg.
Standard Oil Co., No. 46-19-V Kettleman North, Kings	19-23-19	7,778	br. sh. drlg.
Kettleman View Oil Co., well No. 1, Kings Co.	29-22-19	4,791	gr. sd. drlg.
McBurney Oil Co., No. 1 Carriso, San Luis Obispo Co.	23-32-22	2,241	br. sh. drlg.
Foster, R. A., No. 1 Carriso, San Luis Obispo Co.	2-32-22	5,000	br. sh. drlg.
Jergins Trust, No. 1 Indian Knob, San Luis Obispo Co.	26-31-12	911	sd. sh. drlg.
Calif. Prod. Co., No. 1 Pattiway, San Luis Obispo Co.	19-10-24	751	sd. sh. drlg.
United Oil Co., No. 2 Panorama, San Luis Obispo Co.	2-32-21	2,253	br. sh. drlg.
Union Oil Co., No. 1 Huasna, San Luis Obispo Co.	22-32-15	3,153	br. sh. drlg.
Lewis, A. O., No. 1 Pecho, San Luis Obispo Co.	34-30-10	2,310	rigging up
Martin, J. D., No. 4 Pismo, San Luis Obispo Co.	5-32-13	3,200	sd. sh. drlg.
Martin, J. D., No. 5 Pismo, San Luis Obispo Co.	5-32-13	3,250	sd. sh. drlg.
Cholame Synd., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,687	will cmt.
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-24-10	8,994	P.B. 8,750
Shell Oil Co., No. 2 Pleyto, Monterey Co.	34-24-10	4,798	sd. sh. drlg.
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3- 1	6,095	sd. sh. drlg.
Amerada Pet. Corp., No. 3 Rio Vista, Solano Co.	26- 4- 2	5,452	sd. sh. drlg.
Associated Oil Co., No. 1 Sargent, San Benito Co.	5-12- 4	4,788	fish. D.P.
Seaboard Oil Co., No. 1 Alameda, Alameda Co.	13- 3- 3	5,574	sd. sh. drlg.
Standard Oil Co., No. 4 McDonald Island, San Joaquin	19- 2- 5	5,275	sd. sh. drlg.
Buttes Oilfields, Ltd., No. 1 Kent, Sutter Co.	2-15- 1	2,530	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status:
Standard Oil Co., No. 1 Alondra, Los Angeles Co.	22- 3-14	7,251	hd. sh. drlg.
Richfield Oil Co., No. 1 El Segundo, Los Angeles Co.	18- 3-14	7,435	cmtd.
Signal Finance, No. 1 Hawthorne, Los Angeles Co.	10- 3-14	9,395	idle
Listle, J. L., No. 1 Moneta, Los Angeles Co.	33- 3-14	7,352	cleaning out
C. C. M. Oil Co., No. 2 Torrance, Los Angeles Co.	31- 3-14	4,373	hd. sd. drlg.
C. C. M. Oil Co., No. 8 Torrance, Los Angeles Co.	9- 4-14	3,636	bailing
Southwest Pet Co., No. 1 Torrance, Los Angeles Co.	6- 4-14	3,185	test. W.S.O.
Black Gold Corp., No. 2 Torrance, Los Angeles Co.	6- 4-14	3,311	reaming
Nelson Pet. Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	1,651	sd. sh. drlg.
Dumas-Lewis Oil Co., No. 3 Torrance, Los Angeles Co.	6- 4-14	3,245	will cmt.
Dearborn Pet. Co., No. 1 Torrance, Los Angeles Co.	16- 4-14	4,556	cmtd. 4,300
Keystone Consd. Oil Co., No. 1 Redondo, Los Angeles	8- 4-14	2,796	sd. sh. drlg.
Standard Oil Co., No. 81 Inglewood, Los Angeles Co.	8- 2-14	2,391	sd. sh. drlg.
Universal Consd., No. 1 Gardena, Los Angeles Co.	36- 3-14	3,897	sd. sh. drlg.
West American, No. 1 Gardena, Los Angeles Co.	5- 4-13	6,861	redrlg. 6,066
Shell Oil Co., No. 84 Dominguez Reyes, Los Angeles Co.	33- 3-13	7,775	flow. 4,115 b.d.
Shell Oil Co., No. 86 Dominguez Reyes, Los Angeles Co.	33- 3-13	4,370	sd. sh. drlg.
Shell Oil Co., No. 87 Dominguez Reyes, Los Angeles Co.	33- 3-13	5,970	sd. sh. drlg.
Shell Oil Co., No. 88 Dominguez Reyes, Los Angeles Co.	33- 3-13	133	sd. sh. drlg.
Union Oil, No. 42 Dominguez Callender, Los Angeles	33- 3-13	6,654	cleaning out
Union Oil, No. 48 Dominguez Callender, Los Angeles	33- 3-13	720	sd. sh. drlg.
Union Oil, No. 50 Dominguez Callender, Los Angeles	33- 3-13	8,447	sd. sh. drlg.
Union Oil Co., No. 42 Hellman Dominguez, Los Angeles	33- 3-13	6,737	milling 6,315
Union Oil Co., No. 44 Hellman Dominguez, Los Angeles	33- 3-13	5,413	flow. 150 b.d.
Barnsdall Oil Co., No. 10 Rosecrans, Los Angeles Co.	20- 3-13	5,395	hd. sd. drlg.
Calizoo Oil Co., No. 1 Compton, Los Angeles Co.	16- 3-13	3,875	milling
Eastern Oil Co., No. 1 Playa Del Rey, Los Angeles Co.	22- 2-15	7,562	cleaning out
Sharby Oil Co., No. 1 Playa Del Rey, Los Angeles Co.	22- 2-15	6,992	sd. sh. drlg.
Union Oil Co., No. 17 Vidor Playa Del Rey, Los Angeles	27- 2-15	6,318	pmp. 100 b.d.
Union Oil Co., No. 15 D.R. Playa Del Rey, Los Angeles	27- 2-15	4,230	sd. sh. drlg.
Superior Oil Co., No. 1 Del Rey, Los Angeles Co.	25- 2-15	8,795	sd. sh. drlg.
Holbrook Pet. Co., No. 1 Newhall, Los Angeles Co.	28- 4-16	3,875	sd. sh. drlg.
Barnsdall Oil Co., No. 1 Newhall, Los Angeles Co.	26- 4-17	5,175	sd. sh. drlg.
Republic Pet. Co., No. 1 Ascot Park, Los Angeles Co.	24- 1-13	1,573	sd. sh. drlg.
Sunset Oil Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,640	idle
Sunset Oil Co., No. 2 Wilmington, Los Angeles Co.	28- 4-13	3,559	rig. to pmp.
Selegna Oil Co., No. 1 Wilmington, Los Angeles Co.	28- 4-13	2,481	sd. sh. drlg.
General Pet. Corp., No. 1 Wilmington, Los Angeles Co.	4- 5-13	5,510	P.B. 5,091
General Pet. Corp., No. 2 Wilmington, Los Angeles Co.	5- 5-13	2,674	cmtd. 2,495
Gauthier Oil Co., No. 1 Wilmington, Los Angeles Co.	27- 4-13	3,691	pmp. 125 b.d.
Standard Oil Co., No. 90 Montebello, Los Angeles Co.	1- 2-12	3,100	cmtd. 3,097
Richfield Oil Co., No. 3 Montebello, Los Angeles Co.	5- 2-11	3,900	sd. sh. drlg.
St. Helens Pet. Co., No. 22 Montebello, Los Angeles Co.	2- 2-12	3,758	pmp. wtr.
St. Helens Pet. Co., No. 23 Montebello, Los Angeles Co.	2- 2-12	3,730	pmp. wtr.
Hathaway Co., No. 2 Fulton Santa Fe Springs, L. A.	6- 3-11	4,650	cleaning out
General Pet., No. 137-F Santa Fe Springs, Los Angeles	6- 3-11	5,490	pmp. 10 b.d.
Union Oil Co., No. 34 Santa Fe Springs, Los Angeles	6- 3-11	4,490	P.B. 4,371
Union Oil Co., No. 36 Santa Fe Springs, Los Angeles	6- 3-11	5,200	rig. to pmp.
Union Oil Co., No. 100 Santa Fe Springs, Los Angeles	6- 3-11	7,425	will cmt.
Union Oil Co., No. 101 Santa Fe Springs, Los Angeles	6- 3-11	5,415	pmp. 116 b.d.
Sibert Oil Co., No. 1 Santa Fe Springs, Los Angeles Co.	31- 2- 4	4,802	fish. D.P.
Julian & Criswell, No. 1 Walnut, Los Angeles Co.	5- 2- 9	1,350	sd. sh. drlg.
Associated Oil Co., No. 4 Huntington, Orange Co.	34- 5-11	4,250	cmtd. 3,918
Re-Mine Oil Co., No. 1 Huntington, Orange Co.	34- 5-11	3,738	reaming
W. C. W. Oil Co., No. 2 Huntington, Orange Co.	34- 5-11	4,140	sd. sh. drlg.
Kohlbush, H. S., No. 1 Huntington, Orange Co.	34- 5-11	4,100	sd. sh. drlg.
Dunlap, D. D., No. 4 Huntington, Orange Co.	2- 6-11	3,180	sd. sh. drlg.
Vicaroo Oil Co., No. 1-A Huntington, Orange Co.	12- 6-11	4,530	sd. sh. drlg.
Petroleum Co., No. 4 Huntington, Orange Co.	2- 6-11	2,160	sd. sh. drlg.
Hammil Oil Co., No. 2 Huntington, Orange Co.	34- 5-11	3,797	sd. sh. drlg.
South Basin Oil Co., No. 93 Huntington, Orange Co.	2- 6-11	3,576	sd. sh. drlg.
Elliott Oil Co., No. 1 Huntington, Orange Co.	34- 5-11	3,897	sd. sh. drlg.
Lucky Strike Oil Co., No. 7 Huntington, Orange Co.	2- 6-11	3,352	redrlg. 1,300
Richfield Oil Co., No. 3 Huntington, Orange Co.	34- 5-11	3,516	redrlg. 2,875
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	2,570	br. sh. drlg.
Shell Oil Co., No. 18 Brea, Orange Co.	2- 3-10	5,276	redrlg. 3,485
Shell Oil Co., No. 19 Brea, Orange Co.	2- 3-10	5,097	P.B. 4,790
Standard Oil Co., No. 2-5 Coyote, Orange Co.	22- 3-10	3,886	sd. sh. drlg.
Oil Conservation Co., No. 1 East Coyote, Orange Co.	17- 3- 9	2,814	cmtd. 2,714
Graham & Loftus, No. 1 East Coyote, Orange Co.	18- 3- 9	1,495	sd. sh. drlg.
Bartholomae Oil Co., No. 3 East Coyote, Orange Co.	22- 3-10	1,560	sd. sh. drlg.
West Coast Ref. Co., No. 1 Santa Ana, Orange Co.	25- 3- 9	2,128	redrlg. 1,981
Union Oil Co., No. 29 Chapman Richfield, Orange Co.	30- 3- 9	8,610	fish. D.P.
Union Oil Co., No. 33 Chapman Richfield, Orange Co.	29- 3- 9	4,885	P.B. 4,450
Union Oil Co., No. 37 Chapman Richfield, Orange Co.	29- 3- 9	3,498	bailing
Union Oil Co., No. 38 Chapman Richfield, Orange Co.	29- 3- 9	3,260	sd. sh. drlg.
Standard Oil Co., No. 2-11 Kraemer Richfield, Orange	30- 3- 9	4,100	sd. sh. drlg.
Calif. Eastern Oil Co., No. 1 Placentia, Orange Co.	31- 3- 9	4,786	redrlg. 4,678
Equitable Pet. Co., No. 1 wildcat, San Bernardino Co.	11-10- 5	2,812	hd. sd. drlg.

KANSAS

Week Ending November 28 (Descriptions are East unless marked otherwise)

Barber County

Pure Oil Co. No. 1 Palmer, SE NE SW sec. 10-33-10w. Drlg. 2,000 ft.

Sinclair Prairie Oil Co. No. 1 Gentry, NE cor. sec. 1-33-15w. Miss. 4,807 ft. (cor.); Viola 5,105 ft.; Simpson 5,235 ft.; Wilcox 5,252 ft.; Sil. 5,331 ft.; T.D. 5,529 ft.; cmt. to 4,880 ft.; W.O.C.

Barton County

John Burton No. 1 Wendel, NE cor. sec. 13-19-11w. Anhy. 785 ft.; drlg. 1,615 ft.

Duwe & Brouk No. 1 Baker, NE SE SW sec. 16-17-13w. R.U.

Freehorn et al No. 1 Sooy, NW NW NE sec. 27-18-12w. Rig.

Indian Terr. Illm. Oil Co. No. 1 Schrapel, SE SE NE sec. 26-20-11w. Loc.

Minnehoma Oil & Gas Co. No. 1 Smith, NW NW NE sec. 20-18-13w. Drlg. 455 ft.

S. L. Parks No. 1 Peach, SE cor. sec. 24-16-14w. R.U.S.T.

C. L. Price No. 1 Deutsch, NW NW NE sec. 16-16-13w. Topeka 2,820 ft.; Oswald 3,135 ft.; Siliceous 3,373-75 ft.; S.O.

Butler County

Hutchinson Oil & Gas Co. et al No. 1-A Westfall, SE SW SE sec. 13-27-3. K.C. 2,255 ft.; H.F.W. 2,325 ft.; 8-in. 2,335 ft.; Miss. 2,765-2,920 ft.; Wilcox 2,995 ft.; T.D. 3,040 ft.; D.&A.

Simpson Oil Co. No. 1 Dahlem, SW cor. sec. 11-26-6. Viola 3,196 ft.; H.F.W. 3,-200-02 ft.; S.S.O. 3,207-12 ft.; Wilcox 3,-207 ft.; Sil. 3,289-92 ft., T.D.; inc. wtr.; D.&A.

Ed Solomon No. 1 Church, SW NE SE sec. 8-28-5. T.D. 200 ft.; abd.

Ralph Wixson et al No. 1 Coulter, NW SW NE sec. 3-27-7. Drlg. 345 ft.

Chase County

Propp et al No. 1 Fromm, SE cor. sec. 29-18-9e. Set 6-in. pipe at 2,415 ft.

Cowley County

Austin & McKnabb No. 1 Wilson, NE NE SE sec. 20-32-6. Rig.

Craft et al No. 1 Whitson, NE cor. sec. 20-33-4e. T.D. 50 ft.; abd.

C. H. Cross No. 1 Cook, SW cor. sec. 6-32-6. Spudded.

Hume Natural Co. & McNish No. 2 Werner, SE SE SW sec. 31-32-6. Chat 3,068-87 ft.; est. 5 B.O. at 3,079-84 ft.

Tom Palmer No. 1 Pierce, SE SE SW sec. 14-31-3e. R.U.R.

Simpson Oil Co. and Stanolind O. & G. Co. No. 1 Weigle, SW SW NE sec. 18-31-6. B.R.

Wakefield et al No. 1 Beekman, NW NW SE sec. 26-32-3. 8-in. 2,160 ft.; U.R. at 2,240 ft.

Decatur County

Winkler & Koch No. 1 Vessey, C NW SE sec. 26-3-26w. Fsg. 2,135 ft.

Edwards County

Stanolind O. & G. Co. et al No. 1 Donovan, C SE SE sec. 14-26-18w. Whipstock 4,322 ft.; 5-in. 4,590 ft.; C.O.

Ellis County

H. Jones Bros. et al No. 1 Phillips, SE SE NW sec. 9-15-17w. Set 12-in. 821 ft.; drlg. 850 ft.

Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w. K.C. 3,445 ft.; Topeka 3,160 ft.; ½ B.P.H. 3,499-3,503 ft.; drlg. 3,555 ft.

Lario O. & G. Co. et al No. 1 Cress, NE cor. sec. 13-11-17w. Anhy. 965 ft.; drlg. 1,680 ft.

Loomis & Etyner No. 1 O'Laughlin, SE SE NW sec. 27-13-18w. **Rotary rig.**

Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-19w. Set 15-in. csg. 759 ft.; W.O.C. at 815 ft.

Taylor et al No. 1 Emery, NE NE NE sec. 23-14-18w. Anhy. 1,162 ft.; K.C. 3,-285 ft.; Sil. 3,558 ft.; 4 bbls. oil per hr. 3,566-68 ft.; T.D. 3,570 ft.; pmp. 40 B.O. and 10 B.W. in 20 hrs.; now 1,300 ft. W.I.H. and 250 ft. O.I.H.

Winkler & Koch No. 1 Jensen, SW SW NE sec. 3-13-18w. Rig.

Grant County

Columbian Fuel Co. No. 1 Gray, C SE sec. 3-29-35w. Set 8-in. csg. 2,500 ft.; 3,000.-000 ft. gas 2,808 ft.; T.D.; C.O.

Greenwood County

Dunn & Lewis No. 2 Dawson, C NE NE sec. 27-26-13e. S.D. 1,100 ft.

Estes et al No. 1 Edgar, NW NW SE sec. 1-28-8. O.W.D.D.; U.R. 10-in. csg. at 1,-165 ft.

Hollis et al No. 1 Boone, NW NE NE SW sec. 21-26-12. M.I.M.

Guy Scott et al No. 1 Pedroia, SE NE SE sec. 6-26-10. Miss. 2,122 ft.; pay 2,154-61 ft.; 300 ft. O.I.H. in 48 hrs.

C. L. Sheedy et al No. 1 Lindemood, C SW SW sec. 7-25-13. T.D. 1,620 ft.; D.&A.

Harvey County

Harburney Oil Co. No. 1 Schraz, NW NW SE sec. 24-22-3w. Chat 3,160 ft.; S.D. 3,350 ft.

Inca Prod. Co. No. 1 Moore, C NE NE sec. 25-24-3w. S.D. 2,860 ft.

Saco et al No. 1 Guthrie, NE NE NW sec. 8-22-2e. 10-in. 1,993 ft.; C.O. at 2,-600 ft.

Haskell County

Helmerich & Payne No. 1 Meredith, C SW sec. 10-30-33w. R.U.R.

Kearney County

J. L. Murphy No. 1 Campbell, NW NW SW sec. 32-25-35w. Anhydrite 1,900 ft.; T.D. 2,595 ft.

Lincoln County

Graham et al No. 1 Smiley, NE NW NW sec. 26-10-9w. T.D. 300 ft.; T.A.

Logan County

Rose Spring Drlg. Co. et al No. 1 Wright, C SE SE sec. 12-15-35w. Drlg. 2,880 ft.

Lyon County

Clyde Fred et al No. 1 Bruce, NW cor. sec. 18-18-10. R.U.M.

Marion County

Harwood Oil Co. et al No. 1 W. H. Mott, NE cor. sec. 2-17-4e. Chat 2,292 ft.; T.D. 2,361 ft.; D.&A.

Western Kansas Oil & Refining Co. et al No. 1 Hauser, SW cor. sec. 19-19-4. Drlg. 1,280 ft.

Meade County

Pacific Midwest Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. R.U.

Mitchell County

Geo. Siedhoff et al No. 1 Greiss, SW SW SE sec. 16-8-10w. Drlg. 450 ft.

Ness County

Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. 10-in. 1,942 ft.; S.D. 2,717 ft.

Sayre Oil Co. et al No. 1 Riversee, C NE SE sec. 34-18-21w. Drlg. 4,458 ft.

Pawnee County

Kessler & Thier et al No. 1 Shea, NE NE NE sec. 22-21-17w. K.C. 3,539 ft.; drlg. 3,604 ft.

Pratt County

H. V. Elwell et al No. 1 Fay, NW NW SE sec. 15-27-14w. Whipstock 3,000 ft.; drlg. 3,400 ft.

Reno County

Carlock et al No. 1 Brown Realty Co., NW NW NE sec. 32-22-10w. Rig.

Empire O. & R. Co. No. 1 Schrock, NW NW SE sec. 22-24-5w. Set 12-in. 490 ft.; drlg. 689 ft.

Forsker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. Fsg. 3,685 ft.

Miller et al No. 1 Detter, NE SE SW sec. 28-22-7w. 8-in. 3,326 ft.; C.O. at 3,420 ft.

Clyde Pulse No. 1 Payne, SW NW NE sec. 4-22-7w. S.D. 1,940 ft.

Torry & Feaster No. 1 Schroeder, SE cor. sec. 1-23-7w. B.R.

Westgate-Greenland Oil Co. No. 1 Fossey SW SW SE sec. 12-22-8w. Chat 3,566-75 ft.; 7-in. 3,567 ft.; some sat.; R.U.S.T.

Rice County

Aylward et al No. 1 M. A. Johnson, NW NW NE sec. 17-21-7w. Drlg. 3,070 ft.

Buckley No. 1 Bailey, SW SW NW sec 19-20-6w. Rig.

Carlock et al No. 1 Deweese, SW NW NW sec. 32-20-7w. K.C. 2,895 ft.; Cong. 3,315 ft.; 300 ft. O.I.H. in 12 hrs. at 3,333 ft.; Chat 3,355-57½ ft.; S.D. 36 hrs.; 300 ft. Charles Petroleum Corp. No. 1 Speck, N. F.I.H.; 200 shots 3,311-20 ft.; small inc. NW SE sec. 29-20-8w. Drlg. 635 ft.

Hanna et al No. 1 Brothers, SE SE NW sec. 25-20-8w. Rig.

Indian Terr. Ill. Oil Co. No. 1 Fossey, SW SW NE sec. 31-20-10w. R.U.

Sage et al No. 1 Patton, SW cor. sec 5-21-7. Cong. 3,329-37 ft.; T.D. 3,342 ft.; 6-in. liner at 3,337 ft.; swabbed 35 bbls. oil per hr.

Shell Petroleum Corp. et al No. 1 Soeken "A," C NW sec. 10-19-9w. K.C. 2,896-3,190 ft.; Cong. 3,212 ft.; Simpson 3,249 ft.; S.S.O.; D.S.T. 3,264-79 ft.; dry; Siliceous 3,300 ft.; T.D. 3,309 ft.; S.S.O.&W.

Rooks County

Buckner & Schoff No. 1 McConnel, NE cor. sec. 34-6s-18w. 10-in. 1,410 ft.; C.O.

Empire Oil & Ref. Co. No. 1 Ham, SW NW NW sec. 24-8-19w. Anhy. 1,389 ft.; drlg. 2,800 ft.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. R.U.R.

Jarvis & Strickler No. 1 Hamel, SE SE SW sec. 7-8-20w. Anhy. 1,503 ft.; Topeka 2,979 ft.; drlg. 3,035 ft.

L. C. D. Drlg. Co. et al No. 1 Westhusin C NE SE sec. 11-9-17w. Topeka 2,894 ft.; pay 3,231-42 ft.; swbd. 162 bbls. in 24 hrs.; gr. 35.8; acidized; potential 504 B.O. with 252 B.W.; T.D. 3,243 ft.; comp.

J. H. Lester No. 1 Methene, SE SE NE sec. 29-10-20w. S.D. 3,422 ft.

J. A. Shoemake No. 1 Stebbins, NE NE SW sec. 26-7-17w. T.D. 3,591 ft.; P.B. to 2,806 ft.; pmpd. 25 B.O. and 100 B.W.

Snowden & McSweeney No. 1 Hindman, C E½ NW sec. 3517s-17w. Rig.

Rush County

G. M. Piggott et al No. 1 Maresch, C NW NW sec. 28-19-19w. Loc.

Schoenfeld & Kitch No. 1 Winget, SE cor. sec. 15-16-16w. 12-in. csg. 1,059 ft.

C. L. Sheedy No. 1 Bison, SW cor. sec. 35-16-17w. Sil. 3,605 ft.; LaMotte 3,618 ft.; S.S.O. 3,614-20 ft.; H.F.W. 3,628 ft.; T.D. 3,700 ft.; D.&A.

Russell County

Joe Aylward et al No. 1 McAllister, NE NE SE sec. 9-12-13w. Miss. 3,525 ft.; H.F.W. 3,567-68 ft., T.D.; no Siliceous; D.&A.

Empire O. & R. Co. No. 1 Frederick, SE cor. sec. 18-15-11w. C.O. at 385 ft.

Equity Gas Co. No. 1 Harbaugh, NW NE SW sec. 19-13-12w. Drlg. 445 ft.

Saline County

Brouk et al No. 1 Ohelander, NE NW SE sec. 10-16-3w. 8-in. 2,596 ft.; drlg. 2,-800 ft.

Sedgwick County

Cameron et al No. 1 Smith, SW SE SE sec. 13-27-2e. Spudded and S.D.

D. R. Lauck No. 1 McLean, SW SW SE sec. 1-27-1w. Siliceous 3,613 ft.; drlg. 4,-555 ft.

A. J. Wallace et al No. 1 Scheer, SW cor sec. 22-27-3w. S.O. 3,145 ft.; base K.C. L. 3,265 ft.; chat 3,690 ft.; Viola 4,162 ft.; Simpson 4,182 ft.; Siliceous 4,270 ft.; cd. 4,276-85 ft.; rec. 9 ft.; salty taste.

Seward County

Helmerich & Payne No. 1 Hyde, C SW sec. 14-31-34w. R.U.

Scott County

C. R. Blackman et al No. 1 Nolan, NW NW NE sec. 13-19-33w. Loc.

Sheridan County

O. A. Roberts et al No. 1 Corrick, C NW sec. 34-9-26w. Set 15-in. csg. 124 ft.; W.O.C.

Smith County

Helmerich & Payne, No. 1 Meyer, C NE SW sec. 10-5-11w. Miss. 3,575 ft.; drlg. 3,675 ft.

Stafford County

Atlantic Ref. Co. et al No. 1 Davis, SE SE SW sec. 32-23-12w. Drlg. 2,535 ft.

Empire Ref. Co. et al No. 1 Jordon, SW SW NW sec. 15-25-14w. K.C. 3,640 ft.; pay 3,722-27 ft.; 2,900 ft.

Skelly Oil Co. et al No. 1 Kipp, SE SE NE sec. 27-25-14w. Set 6-in. csg. 4,083 ft.; Viola 4,093-97 ft.

C. E. Skiles et al No. 1 Hughes, SW cor. sec. 12-23-12w. Drlg. 175 ft.

E. Skiles No. 1 Leidigh, NW NW SW sec. 21-22-11w. K.C. 3,260 ft.; 6-in. 3,262 ft.

C. H. Lebow et al No. 1 Wolk, SE SW NW sec. 3-21-12w. Skidded rig; set 10-in. at 296 ft.; W.O.C.

Sumner County

Empire O. & R. Co. No. 1 Hoffman, NW NW SW sec. 27-34-1e. 10-in. 2,230 ft.

Graham et al No. 1 Dawson, NW NW NW sec. 4-33-2w. Drlg. 2,690 ft.
Hapenny & Green et al No. 1 Evers, SE SE NE sec. 27-31-2. S.D. 519 ft.
Lario O. & G. Co. et al No. 1 Hall, NW SW NW sec. 11-35-1e. Drlg. 615 ft.
W. C. McBride, Inc. & Olson Drilling Co. No. 1 Kinlund, NE NW NE sec. 24-34-1e. Layton 2,892 ft.; chat 3,538 ft.; based Miss. 3,770 ft.; Sil. 3,894 ft.; cd. 3,893-3,908 ft.; full rec.
Rose Spring Drlg. Co. et al No. 1-A Rutter, C NW NW sec. 21-33-2e. Chat 3,215-25 ft.; set 8-in. csg.
Lloyd, Study & Frost et al No. 1 fee, SE cor. sec. 31-34-1e. R.U.R.

Tregо County

Black Gold Oil Co. No. 1 Allman, C SW SW sec. 34-14-21w. Loc.
York State Oil Corp. No. 1 Gugler, SW cor. sec. 36-12-21w. Sil. 3,830 ft.; pay 3,-827-39 ft.; P.B. to 3,832 ft.; cmtd. 5-in.; W.O.C.

Woodson County

Dwyer et al No. 1 Wolf, NE NE SW sec. 9-24-14. Drlg. 1,340 ft.

OKLAHOMA

Week Ending November 28

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1 Biscoe, SW SW SW sec. 28-8-22w. T.D. 1,080 ft.; U.R.

Cleveland County

Heimerich & Payne, Inc., No. 1 Glenn, C NW NE sec. 6-8-1w. Drlg. 3,568 ft.
W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. Rig.

Coal County

Carter Oil Co. et al No. 1 Warne. NE NE NW sec. 31-3-9. Cd. 4,914-24 ft.; rec. 6-in. Hunton; S.D.O.; cd. and drilled 5,040-44 ft.; dry recovery.
Continental Oil Co. No. 1 Breedlove, NW SW SW sec. 24-1-8. Drlg. 4,603 ft.
Continental Oil Co. No. 1 Daniels, SW NE SW sec. 27-1-9. Drlg. 4,592 ft.
Continental Oil Co. No. 1 King, NE SW NE sec. 26-1-8. Hunton 4,354 ft.; drlg. 5,345 ft.
Continental Oil Co. No. 1 W. Kirby, SW SE SW sec. 23-1n-8e. T.D. 1,190 ft.; pulled 9-in.; R.U.R.
Shell Pet. Corp. No. 4 Hill-A, NW sec. 30-3-10. Packer 4,202 ft.; Hal. test 800 ft. mud; S.S.G. and salty; drlg. 5,085 ft.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. Layton 1,605-95 ft.; Jones 1,835-50 ft.; Cleveland 1,985-2,010 ft.; S.G.; Prue 2,505-50 ft.; sd. 2,-559-60 ft.; S.O.; 6-in. at 2,545 ft.

Garfield County

Ohio Oil Co. No. 1 McFarland, SE SE SE sec. 25-24-3w. Oread 2,690 ft.; Layton 3,-738 ft.; drlg. 3,380 ft.
Ohio Oil Co. No. 1 Smythe, NE NE SW sec. 23-22-4w (Wilcox sd. test) Viola 4,-879 ft.; Simpson 4,910 ft.; first Wilcox 4,968-5,020 ft.; second Wilcox 5,070 ft.; Tyner 5,193 ft.; Arbuckle 5,358 ft.; T.D. 5,449 ft.; P.B. 5,200 ft.; Halliburton test, wtr.; P.B. 2,365 ft.; S.S.O. after C.O.

Garvin County

Ellison & Hammond No. 1 Selby, C SE NW sec. 24-2n-3w. Drlg. 4,470 ft.
C. A. Luttrell et al No. 1 Howell, NW SE NW sec. 34-1-1. T.D. 160 ft.; Hayes Drlg. Co. to drill well.
Pure Oil Co. No. 1 Baker, NE cor. sec. 7-2-1e. Simpson 3,744 ft.; second Wilcox 4,284 ft.; sd. to 4,299 ft.; rec. 2 ft. sd., salty taste; last 3 in. odor of sulfur; McLish L. 4,319 ft.; drlg. 5,015 ft.

Greer County

Bud Lewis et al No. 1 Webster, SW NE NE NE sec. 7-7-24w. Drlg. 645 ft.; brok. L. and sh.
Neff-Godfrey-Andrea No. 1 Melton, SE NW SE sec. 16-3n-22w. Loc.

Hughes County

W. W. Bussett No. 1 Field, C NW SW sec. 11-9-11. R.U.S.T.
R. K. Ellison No. 1 Peters, SE NW SE sec. 8-6-10. Booch 2,765 ft.; drlg. 2,942 ft.
Mcadams & Barnes No. 1 Koch. SW NE NE sec. 1-9-10. T.D. 3,823 ft.; P.B. 3,710 ft.; drlg. cmt.
Mid-West Oil Co. No. 1 Turner-Lucas, C SE NW sec. 13-9-9. T.D. 950 ft.; U.R. at 900 ft.
Southern Oil Co. No. 1 Buck, C NW SW SW sec. 21-8-10. R.U.S.T.

Kay County

G. A. Brown et al No. 1-A Harris, SW SW NE sec. 14-25-1e. Cellar.
Max Kelley No. 1 Johns, NW NW NW sec. 35-27-4. Tonkawa 1,990 ft.; B.L. 2,-770 ft.; Oswego 2,890 ft.; drlg. 2,962 ft.

Kiowa County

Algua Pet. Co. No. 1 Osbourne, NW cor. NE sec. 9-7-16w. L. 1,180 ft.; S.G.; fsg. 1,225 ft.; T.D.
Burns & Moore No. 1 Block, NW NE SW sec. 31-6-16w. S.D. 50 ft.
Lykins et al No. 1-A Aetna Life, SE cor. sec. 8-5-16w. T.D. 851 ft.; S.D.
Travis & Scott No. 1 Doyle, NE SE SW sec. 21-5-17w. T.D. 939 ft.; machine moved out.

Latimer County

Cheyenne Oil Co No. 1 Wilson, C SE SE sec. 15-5-18. Sd. 2,248-60 ft.; S.O.; drlg. 2,455 ft.

Le Flore County

McCraw et al No. 1 Tidwell, C NW SE sec. 17-3-22. 10-in. 2,246 ft.; T.D. 2,340 ft.; U.R.

Lincoln County

Fleetborn Oil Corp. No. 1 Turner, NW NW SE sec. 28-17-5. Layton 2,284 ft.; S.G.; B'ville 3,508 ft.; first Wilcox 3,953-67 ft.; est. 4,000,000 ft. gas, no oil, on D. S T.; second Wilcox 3,985-86 ft., T.D.; no show; 7-in. 3,981 ft.; to D.D.
Skelly Oil Co. No. 1 Sporn, NW NE SW sec. 21-17-3. T.D. 4,651 ft. in sd.; P.B. to 4,588 ft.; to comp. as gas well and drill twin.

Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. Drlg. 4,970 ft.
Heimerich & Payne et al No. 1 Hasler, NW NW SE sec. 14-16-4w. Oread 3,740 ft.; Tonkawa 4,130 ft.; Checkerboard 5,-130-75 ft.; T.D. 5,365 ft.; fsg.

McIntosh County

Stanolind Oil & Gas Co. et al No. 1 Tiger NW NW SW sec. 13-9-15. T.D. 4,993 ft.; D.&A.

Muskogee County

A. D. Spears et al No. 1 Robbins, NW cor. sec. 20-15-20. Turkey Mt. sd. 1,677-84 ft.; Arbuckle 1,710 ft.; T.D. 1,811 ft.; S.S.O.; S.D.

Noble County

Shell Pet. Corp. No. 1 Moelling, C SW NW sec. 31-21-2w. Layton 4,190 ft.; Oswego 4,715 ft.; Miss. 5,135 ft.; drlg. 5,185 ft.
Taylor & Lindsay et al No. 1 Aetna Life, SE SE NW sec. 1-23-2w. M.I.R.

Okfuskee County

Harvey Oil Co. No. 1 Stewart, NE cor. sec. 28-10-9. Set 10-in. csg. at 61 ft.; S.D.

Osage County

Chavalier & Simon No. 1 Osage, SE cor sec. 24-23-9. Cleveland 1,400-30 ft.; dry; lower Cleveland 1,485-1,525 ft.; H.F.W.; Big L. 1,610-1,725 ft.; sd. 1,891-1,905 ft.; wtr.; S.D. 2,290 ft.

Pawnee County

Forest Dev. Corp. No. 1 Otter, NE NW sec. 15-21-5. Drlg. 3,185 ft.

Pittsburg County

Okla. Dist. Oil Co. No. 1 Beeler, NE NE SW sec. 7-7-14. Sand, 3,398 ft.; drlg. 4,084 ft. in blk. sh.

Pontotoc County

Caloma Oil Corp. No. 1 Brentz, SE NE SW sec. 4-1-6. S.D. 503 ft.
W. A. Delaney and Boettcher O. & G. Co. No. 2 Alexander, SW NE SW sec. 24-4-7. M.I.T.

Seminole County

Amerada Pet. Co. No. 1 Yarhola, NE NW NW SE SE sec. 12-6-6. Sand 2,290-2,301 ft.; oil stain; Cromwell sd. 2,903 ft.; S.W.; to P.B.
Riverland O. & G. Co. No. 1-A Goebelt, NW SE SE sec. 12-6-6. Drlg. 2,030 ft.
A. I. Spears No. 1 Keaton, NW cor. sec. 6-5-8. Rig.

Texas County

Allison & Barnhill No. 1 Bingley, SE SE NE sec. 30-2n-18. (Cimmaron Meridian) Sd. 1,374-1,450 ft.; sd. 1,513-30 ft.; wtr.; T.D. 1,575 ft.; S.D.

SOUTHERN OKLAHOMA

Atoka County

A. J. Sanders No. 3 Redden, SE SW SW sec. 19-1n-15e. Sdy. L. 910 ft.; cd. to 932½ ft.; U.R. 7-in. 60 ft. off bottom.

Carter County

Head & Straus No. 1 Simpson & Fell, NW NW SE sec. 5-1s-3w. Drlg. 1,017 ft.

Comanche County

Frank Scott No. 1-A Kuntz, SE NE SE sec. 21-4-11w. T.D. 1,016 ft.; S.D.
L. D. Wise No. 1 Cones, SE SE SW sec. 11-1n-10w. T.D. 2,156 ft.; S.D.

Cotton County

Phillips Pet. Co. No. 1 Warren, C NE NE SE sec. 1-5s-13w. Canyon series 2,160 ft.; L., 2,240 ft.; T.D. 2,695 ft.; U.R. at 2,-685 ft.
Grace-Wood Drlg. Co. No. 1 Wilson, C SW NW sec. 17-4s-11w. Cisco 2,997 ft.; drlg. 3,185 ft.

Harmon County

Lloalko Trust, Ltd., No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. T.D. 2,980 ft.; S.D.O.

Jefferson County

Massad & Swansberger No. 1 Barrett, NE cor. SE SE sec. 14-6s-6w. T.D. 21 ft.; S.D.
Mid-Continental Oil Co. No. 1 Reid, C SW NW sec. 32-6s-4w. T.D. 1,800 ft.; S.D.

Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. Drlg. 537 ft.

Love County

Amerada Pet. Corp. No. 1-A Westheimer & Daube, SW SE SW sec. 27-6s-2e. T.D. 7,363 ft.; P.B. 2,970 ft.; perforated csg. at 1,539-99 ft. and 2,095-2,115 ft.; cmtd. perf.; flwd. 22 bbls. in 24 hrs. and "went dead"; S.D.O. Aug. 4.
W. H. Riddle et al No. 1 Johnson, C SW SE cor. sec. 20-8s-2w. T.D. 4,009 ft.; waiting for tools; will deepen.
Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,583 ft.; cut 5-in. csg. at 7,109 ft.; P.B. to 6,927 ft.; flwd. 90 bbls. Nov. 21; rep. engine.

Marshall County

Magnolia Pet. Co. No. 1 Gardner, NE NE NW sec. 34-6s-6e. Sycamore 1,440 ft.; drlg. 1,455 ft.

Murray County

Power Oil Co. et al No. 1 Lancaster Trust C SW NE sec. 10-1s-2e. Woodford 2,630 ft.; Hunton 2,951 ft.; 7-in. csg. 2,952 ft.; drlg. L. 3,020 ft.
J. Ben Russell No. 1 fee, SE SE NW SE sec. 9-2s-3e. Spudded 26 ft.

Stephens County

Jack Cohen No. 1 Pierce, NE NE NW sec. 24-2s-6w. Spudded 20 ft.
Coline Oil Co. No. 1 Johnson, SW SE NE sec. 1-2n-8w. T.D. 4,786 ft.; fsg.
H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. Drlg. 1,955 ft.
Ed Parson No. 1 Olson, C SW SW sec. 31-2-8w. Sdy. L. 5,518 ft.; mud, wtr. and oil on D.S.T.; core at 5,745-60 ft. recvd. 12 ft. 9 in. oil-stained sd., 2 ft. wtr. sd. and 3 in. sh.; drlg. ahead.

Tillman County

Indian Terr. Ill. Oil Co. No. 1 Hatler, C SW NE sec. 32-2s-17w. L. 3,800 ft.; packer 3,795 ft.; flwd. oil, mud and wtr. on D.S.T.; set 9⅝-in. csg. 3,791 ft.; T.D. 3,816 ft.; W.O.C.
Lynn Oliver No. 1 Rilling, SE SE NW sec. 22-1s-15w. Granite Wash 1,275-78 ft.; S.O.; T.D. 1,314 ft.; fsg.
D. S. Smith No. 1-A Hammill, NE NE NW NW sec. 6-5s-15w. T D. 2,425 ft.; S.D.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo-Rodessa

Ark.-La. Gas Co. No. 2 Teamer. NW SE SW sec. 13-23-16. Drlg. out whipstock 3,269 ft.
J. G. Collins No. 2 Caddo School Bd., sec. 8-23-15. Drlg. 5,161 ft.
Idessa Oil Co. No. 1 D. K. Sumner, NW SW SE sec. 10-23-15. T.D. 6,197 ft.; swbg.; no show.
J. Edward Jones No. 1 M. Z. Sharp, 1,227 ft. N, 330 ft. E, SW cor. SE¼ sec. 4-23-16. 7-in. cmt. 5,939 ft.; tstg.; T.D. 6,-035 ft.
Lion Oil Co. No. 5 Wynn, 330 ft. N, 3,310 ft. E, SW cor. sec. 9-23-15. 7-in. cmt. 6,012 ft.; T.D. 6,040 ft.; W.O.C.S.
Lion Oil Ref. Co. No. 6 Wynn, NE SW SE sec. 9-23-15. Drlg. 2,073 ft.
Lion Oil Ref. Co. No. 7 Wynn, NE SW sec 9-23-15. Drlg. 1,240 ft.
Magnolia Pet. No. 9 J. E. George, John Collom Sur. Loc.
McAlester Fuel Co. No. 2 N. S. Tyson, C sec. 22-23-16. Perf. csg. 5,976-80 ft.; tstg.
R. W. Norton No. 4 J. T. Moore, Wm. R. Myers Sur. Drk.
R. W. Norton No. 1 Payne, C SE SE sec. 27-23-16. Drlg. 5,105 ft.
R. W. Norton No. 1 Starke, SE SW sec. 16-23-16. Comp.; flw. 303 bbls. in 16 hrs.; ¼-in. tbg. ck.; T.D. 5,995 ft.
Phillips Pet. Co. No. 2 Interstate, 330 ft. S and W, NE NW sec. 16-23-15. Drlg. 4,000 ft.
Phillips Pet. Co. No. 2 Rose McDonald, NW SE½ NE sec. 17-23-15. Comp.; flw. 12 B.P.H.; ¼-in. tbg. ck.; T.D. 6,075 ft.
Phillips No. 3 Rose McDonald, NE cor. sec. 17-23-15. R.U.
Snowden & Anding No. 3 Taylor, C W½, Lot 9, Blk. 46, sec. 23-23-16. 7-in. cmt. 5,826 ft.; T.D. 5,952 ft.; W.O.C.S.
Standard Oil of La. No. 1 Farmer, SW NW SW sec. 7-23-15. Cg. 5,994 ft.
United Gas No. 4 fee, NW NW SE sec. 16-23-16. Cg. 5,898 ft.
United Gas No. 5 Brewer Unit, SE SW NW sec. 21-23-16. Comp.; flw. 22 B.P.H.; ⅝-in. ck.; T.D. 5,990 ft.
United Gas No. 3 Gibson Unit, 656 ft. N and E, SW SW NW sec. 15-23-16. Drlg. 4,000 ft.
United Gas No. 4 Harris, NW NW SE sec. 15-23-16. Drlg. 5,000 ft.
United Gas No. 2 McCoy, 656 ft. N and W, SE SE NE sec. 16-23-16. Drlg. 4,-637 ft.
United Gas No. 26 Rodessa O. & Ld. Co., NW SW NE sec. 15-23-16. T.D. 6,002 ft.; tstg.

Trade Mark

No Job Too Tough

Many years of experience in the equipping of hundreds of drilling rigs, pumping and servicing units, have gone into the making of Diamond (Oil Country) Chains and Sprockets . . . You can depend on their durability and reserve capacity.

DIAMOND CHAIN & MFG. CO.
475 Kentucky Ave., Indianapolis, Ind.
Tulsa, Okla., 227 E. 29th St.

DIAMOND
ROLLER CHAIN

C. M. HEETER, SONS & CO., INC.
MAIN OFFICE AND WORKS, BUTLER, PA.

"Heeter's" Packers and Swabs

Heeter's Improved Patent Swabs, Corrugated Friction Sockets, Wire Line Pumping Outfits, Sand Pumps and other Gas and Oil Well Materials.

United Gas No. 5 W. R. Spearman, NW SW sec. 15-23-16. T.D. 5,985 ft.; tstg.

N. LOUISIANA WILDCATS

Bienville Parish

DeSoto O. & G. Co. No. 1 Dunn and Olsen, C N½ NW¼ sec. 15-16-10. T.D. 4,480.; tstg. S.W.; W.O.

Lide & Greer No. 1 Smelley, 220 ft. N, 160 ft. W, SE SW NE sec. 13-16-5. Drlg.

Seaboard No. 1 McGee, 660 ft. N and E, C sec. 3-16-6. O.W.D.D.; R.U.

Bossier Parish

Ark-La No. 1 W. H. Davis, 660 ft. S, 1,270 ft. E, NW NE NW sec. 8-17-11. R.U.

Ark-La Gas No. 1 P. Potter, SW sec. 8-17-11. Drlg.

Premier Inv. Co. No. 38 Wyche, NE NW NW sec. 14-19-11. T.D. 350 ft.; sd.; tstg.

Tidwell et al No. 1 Natting, sec. 15-22-14 7-in. cmt. 5,965 ft.; T.D. 2,971 ft.; W.O.C.S.

United Gas No. 1-G H. L. Skannal, NE SE NE sec. 22-17-12. Cg. 4,398 ft.

Caddo Parish

Bayou State No. 3 S. Jolly, 700 ft. S and E, NW NW SW sec. 22-22-15. Drlg. 800 ft.

C. C. Crews No. 2 Pender NW SW sec. 11-20-15. 6-in. cmt. 2,178 ft.; W.O.C.S.

W. D. Chew No. 1-D Levee Bd., NW SE NE sec. 34-21-16. T.D. 932 ft.; W.O.S.R.

W. D. Chew No. 2 U. S. Govt., NW cor. sec. 5-20-15. R.U.

Custer Oil Co. No. 1 Wemple, N½ NW sec. 14-20-15. Drlg. 35 ft.

Gulf Ref. Co. No. 1 E. F. Hatcher, 660 ft. N and E, SW cor. SE¼ sec. 11-17-13. Drlg. 7,016 ft.

Lawrence Potter No. 1 Head, NE NE sec. 26-21-15. R.U.

F. L. Luckett No. 1 Connell, SW NE sec. 10-20-15. Drlg. 1,065 ft.

Maja Oil Co. No. 1 Hyman, 950 ft. W, 860 ft. N, SE cor. sec. 10-20-15. Drk.

Matt M. Press No. 1 Keller, SE cor. sec. 10-20-15. Cg. 2,174 ft.

Producers O. & G. Co. No. 2 Currie, NE SE sec. 32-19-16. T.D. 950 ft.; W.O.

Rodgers et al No. 1 Thompson, NW SW SW sec. 11-20-15. Drk.

Morefield & Prine No. 3 Stokeley, sec. 5-20-16. 6-in. cmt. and perf.; T.D. 957 ft.; W.O.C.S.

Shreveport Oil Co. No. 8-B Muslow, SW NW sec. 4-20-15. Cg. 2,165 ft.

Simplex No. 5 Natalie, SE W½ SE sec. 10-20-15. P.B. 2,177 ft.; dry; T.D. 2,197 ft.; W.O.

Stanolind O. & G. Co. No. 113 Dillon hrs., 655 ft. S, 744 ft. E, NW SE sec. 14-21-15. Comp.; pmp. 18 B.P.D.; T.D. 1,715 ft.

Stanolind O. & G. Co. No. 114 Dillon hrs., 65 ft. N, 816 ft. E, SW SE NE sec. 14-21-15. R.U.

Stewart-Williams No. 3 Iron, SW NE 10-20-15. T.D. 2,197 ft.; W.O.S.R.

Catahoula Parish

Balcones Corp. No. 1 T. J. Chishom, 1,500 ft. N, 2,500 ft. W, SE cor. sec. 19-10-8e. Drk.

Claiborne Parish

Max Hirsch et al No. 1 C. O. Ferguson, 2,640 ft. N, 1,000 ft. E, SW cor. sec. 29-22-6w. Drk.

E. T. Oakes No. 1 H. W. Patton, NE cor. sec. 1-20-5. Drlg. 5,315 ft.

United Gas Public Service Co. No. 2 Durfett, 660 ft. N and 1,980 ft. E. SW cor. sec. 31-20-5. P.B. 5,703 ft.; tstg.

United Gas No. 1 A. P. Taylor, SE cor. sec. 5-19-5. Cg. 5,854 ft.

De Soto Parish

Chamberlin et al No. 1 Lanier, 280 ft. N and E, SW NE sec. 29-11-11. Drk.

Fite et al No. 1 Ramsey, sec. 36-11-11. 13.D.; W.O.; T.D. 1,786 ft.; hole clean.

Jal Drlg. Co. No. 1 Jenkins, SE SW SE sec. 35-13-12. 7-in. 2,397 ft.; T.D. 2,640 ft.; W.O.S.R.

R. Kamon No. 1 Roscoe, SE NW sec. 14-12-13. T.D. 1,840 ft.; swbg. for test after acid.

R. C. Payne No. 1 Harris, sec. 11-13-14. Cg. 2,990 ft.

Peral Oil Co. No. 1 Joyner, SE NW SW sec. 28-11-12. 12-in. at 123 ft.; W.O.C.S.

Stillers et al No. 2 Jenkins, 330 ft. S and W, NE SE NW sec. 35-13-12. Drlg. 950 ft.

R. M. Sundby No. 1 A. P. Garland, NW SW sec. 7-14-14. Drlg. 2,385 ft.

Franklin Parish

Snyder & Sherrouse No. 1 Kimbee, SE SW sec. 36-12n-8e. T.D. 1,750 ft.; S.D. for fuel; showing oil.

Grant Parish

Arcadia Oil Co. No. 4-B Swope, 330 ft. N of No. 2-B, sec. 17-9-1e. R.U. and S.D.

Cane River Prod. Co. No. 1 Swope, SW NW sec. 17-9-1e. Tstg.; T.D. 1,609 ft.

Grant Oil Corp No. 1 Holmes, 300 ft. N, 150 ft. E, SW NE SW sec. 17-9-1e. Drlg. 600 ft.

Kirby et al No. 1 Maxwell, 150 ft. N, 300 ft. W, SE SW sec. 9-9-1e. Drlg. 670 ft.

Pet. Prod. Co. No. 1 Buffington, SE NE sec. 18-9-1. T.D. 1,608 ft.; W.O.S.R.

Perry et al No. 1 Barrett, 150 ft. N and W, SE NE SE sec. 17-9-1e. T.D. 1,604 ft.; 6-in. 1,583 ft.; W.C.C.S.

Morehouse Parish

Carbons Cons. No. 7 Feazel, NW SW sec. 3-20-4e. Comp.; 3,500,000 ft. gas; T.D. 2,099 ft.

Se. Carbon Co. No. 17 Tensas, NE cor. sec. 4-20-4. 12-in. cmt. 176 ft.; W.O.C.S.

S. D. Hunter No. 11 Allison, 4,402 ft. E, 2,423 ft. S, NW cor. sec. 1, in sec. 47-20-4e. Loc.

S. D. Hunter No. 12 Allison, 3,288 ft. E, 1,144 ft. N, SW cor. sec. 36, in sec. 37-21-4e. Loc.

S. D. Hunter No. 13 Allison, 4,253 ft. E, 3,666 ft. N, SW cor. sec. 36, in sec. 37-21-4e. Drlg. 450 ft.

United Carbon No. 3 Crossett, 641 ft. N and W, SE sec. 19-21-5e. R.U.

United Carbon Co. No. 7 Stovall, NW cor. sec. 27-21-4. Comp.; 5,500,000 ft. gas; T. D. 2,146 ft.

Ouachita Parish

Carbons Cons. No. 10 fee, 707 ft. N, 738 ft. E, SW cor. sec. 26-19-3e. 10-in. cmt. 198 ft.; W.O.C.S.

United Carbon No. 7 Neston, NE cor. sec. 22-19-4e. R.U.

Red River Parish

Hyrd Exp. Co. No. 1 Edge, SW NE sec. 29-13-11. Hole clean; T.D. 2,499 ft.; W. O.S.R.

W. J. Hunter No. 1 Long Bell Lbr. Co., sec. 19-13-9. Milled out of csg. 3,500 ft.

Perla Oil Co. No. 1 DeLong, 330 ft. S and E, C sec. 33-12-10. S.D. 1,215 ft.; for fuel.

Richland Parish

Gulf Ref. Co. No. 15 R. R. Rhymes et al, sec. 32-17-6e. 7-in. cmt. 8,040 ft.; drlg. 8,115 ft.

Sabine Parish

Blue Lake Oil Co. No. 1 Delaney & Wheless, NW SW sec. 31-9-13. S.D. for csg.; 7-in. cmt. 1,623 ft.; W.O.C.S.

A. L. Braden et al No. 1 P. Henderson, 720 ft. N, 600 ft. E, SW sec. 29-9-13. 7-in. cmt. 1,595 ft.; W.O.C.S.

F. G. Cox No. 1 Whitney Corp., C NW NE sec. 8-9-13. Washing to bottom.

Earl F. Fox No. 1 Blangenship, NE SE NW sec. 13-9-12. Loc.

J. R. Keen No. 1 Long Bell, 276 ft. N and 288 ft. W, SE cor. NE SW sec. 5-18-13. Acidized; W.O.S.R.

Posey Sisters Oil Co. No. 3 Burkett. NE cor. sec. 10-9-13. S.D. 3,234 ft.

L. Swift No. 1 Long Bell, NW SE SW sec. 11-8-14. R.U.

Union Parish

Interstate Nat. Gas No. 57 fee, 660 ft. N, 4,635 ft. W, SE sec. 30-21-4e. 12-in. cmt. 159 ft.

Interstate Nat. Gas No. 58 fee, 4,620 ft. N, 700 ft. W, SE sec. 1-20-3e. R.U.

Interstate Nat. Gas No. 16 Grayling, 660 ft. N, 1,375 ft. W, SE cor. sec. 20-21-4e. Loc.

So. Carbon Co. No. 13 Grayling, SE cor. sec. 5-21-4e. Comp.; 6,000,000 ft. gas; T. D. 2,16 3ft.

So. Carbon Co. No. 14 Grayling, SE cor. sec. 5-21-4e. Drlg. 900 ft.

Webster Parish

Magnolia Pet. Co. No. 5 J. Cox, SW SE sec. 23-21-10. Drlg. 6,553 ft.

R. W. Norton No. 2 Josey & Masey, C W½ NE NW sec. 27-21-10. Clearing loc.

Ohio Oil Co. No. 1 R. M. Coyle, NE SE sec. 22-21-10. Drlg. 7,164 ft.

Ohio Oil Co. No. 1 Bodcaw Lbr. Co., C NE SE sec. 28-21-10. Drlg. 7,263 ft.

Seaboard Oil Corp. No. 1 Cotton Valley Ld. & Lbr. Co., NW SW sec. 35-22-10. Drlg. 4,877 ft.

Standard Oil Co. of La. No. 1 E. Firdecker, 1,320 ft. E, 1,316 ft. S, NW cor. sec. 2-17n-9w. 13-in. cmt. 277 ft.

Tide Water No. 1 L. Pipes, NE SE sec. 10-18-10. Drlg. 1,600 ft.

United Gas No. 2 Davis, 660 ft. S and E, NW cor. sec. 23-21-10. Cg. 6,836 ft.

United Gas No. 1 Mixon, SE SW sec. 22-21-10. Drlg. 7,800 ft.

Woodley Pet. Co. No. 2-B L. C. Cox, cen. SW SW sec. 23-21-10. Drlg. 4,420 ft.

Winn Parish

C. A. Cline No. 1 Collingsworth, SW SE SE sec. 14-10-6w. Drk.

SOUTH LOUISIANA FIELDS

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 13 State, sec. 17-22s-18e. R.U.

Bayou Mallett—Acadia Parish

Superior Oil Prod. Co. No. 1 Savoie, sec. 47-7s-1e. Drk.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 35 Watkins, sec. 8-12s-12w. T.D. 5,448 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 33 State, sec. 20-23s-20e. Drlg. sdy. sh. 4,753 ft.

Texas Co. No. 31 State, sec. 20-23s-20e. Drlg. sdy. sh. 3,618 ft.

Charenton—St. Mary Parish

Mike Hogg et al No. 1 Laws Realty Co., sec. 30-13s-10e. R.U.

Choctaw—Iberville Parish

Standard Oil Co. No. 6 Gay, sec. 52-9s-11e. Drlg. sd. and gravel 710 ft.

Standard Oil Co. No. 1 Wilbert, sec. 53-9s-11e. Abd. 2,791 ft.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 15 Sch. Ld., sec. 16-14s-13w. T.D. 3,345 ft.; 7-in. csg. 3,323 ft.

Burton Sutton Oil Co. No. 16 Sch. Ld., sec. 16-14s-13w. Set 10¾-in. csg.; T.D. 3,549 ft.; rng. Schlumberger.

Magnolia-Humble No. 18 Cameron Meadows, sec. 21-14s-13w. T.D. 3,613 ft.; I.P. 465 B.P.D. through ¼-in. ck.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Community, sec. 33-10s-2e. Drk.

Humble O. & R. Co. No. 13 Humble Community, sec. 33-10s-2e. T.D. 4,423 ft. P.B. and sdtrkg.; top salt 5,178 ft.; T.D. 5,254 ft.; P.B. 2,114 ft.; top salt 5,672 ft.; T.D. 5,682 ft.; P.B. 4,465 ft.; 7-in. csg. 4,458 ft.; perf. csg. 4,349-55-57 ft.; failed to flow; pulling D.S.

Fausse Point—Iberia Parish

Texas Co. No. 2 State, sec. 35-11s-8e. T.D. 6,444 ft.; 7-in. cmtd. on bottom.

Garden Island—Plaquemines Parish

Texas Co. No. 20 State, sec. 37-23s-33e. Drlg. sh. 4,417 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 3 Ada Maya, sec. 14-9s-8w. Drlg. sh. and L. 5,351 ft.

Fohs Oil Co. No. 16 Castle, sec. 13-9s-8w. Drlg. sh. 3,207 ft.

Union Sulphur Co. No. 10 Barbe, sec. 1-9s-8w. T.D. 6,745 ft.; 6⅝-in. csg. 6,740 ft.; deepened to 6,790 ft.; P.B. 6,610 ft.; W.O.C.

Union Sulphur Co. No. 11 Barbe, sec. 1-9s-8w. Drlg. sh. 2,987 ft.

Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. Loc.

Union Sulphur Co. No. 2 Bel, sec. 12-9s-8w. T.D. 6,788 ft.; P.B. 5,271 ft.; sidetracked; drlg. sh. 5,556 ft.

Union Sulphur Co. No. 3 Kaufman, sec. 12-9s-8w. T.D. 7,377 ft.; perf. csg. 7,369-74 ft.; flwd. S.W. and oil.

Union Sulphur Co. No. 10 Powell, sec. 29-7s-2w. T.D. 6,758 ft.; pulling screen and lnr.

Union Sulphur Co. No. 11 Powell, sec. 12-9s-8w. Loc.

Union Sulphur Co. No. 13 State, sec. 13-9s-8w. Drk.

Union Sulphur Co. No. 15 State, sec. 13-9s-8w. Drk.

Hackberry—Cameron Parish

Gulf Oil Corp. No. 22 Erwin, sec. 12-12s-10w. Drlg. sd. and L. 3,920 ft.

Harrison and Abercrombie No. 1 Verdine, sec. 36-12s-10w. 16-in. csg. 62 ft.; drlg. salt 4,192 ft.

Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. S.D. 865 ft.

Stanolind O. & G. Co. No. 3 Duhon, sec. 22-12s-10w. Drlg. sdy. sh. 4,067 ft.

Stanolind O. & G. Co. No. 24-B Gulf Ld., sec. 14-13s-10w. Drlg. sd. and sh. 4,217 ft.

Stanolind O. & G. Co. No. 7-A School Ld., sec. 16-12s-10w. 10¾-in. csg. 1,969 ft.; T.D. 5,740 ft.; P.B. and S.T. 3,185 ft.; drlg. sh. 5,201 ft.

Superior Oil Prod. Co. No. 1 Hebert, sec. 33-12s-10w. P.B. and sdtrkd. 775 ft.; drlg. sh. 5,339 ft.

Texas Co. No. 20 State, sec. 12-12s-10w. Waiting on drlg. barge.

Texas Co. No. 19-B State, sec. 13-12s-9w T.D. 6,227 ft.; abd.

Union Sulphur Co. No. 42 Watkins, sec. 13-12s-10w. Loc.

Iowa—Cameron Parish

Shell Pet. Corp. No. 21 Heyd, sec. 13-9s-7w. Drlg. sh. 6,155 ft.

Jeanerette—St. Mary Parish

Stacey Doran et al No. 1 Eaves, sec. 70-13s-9e. Drk.

Herton Oil Co. No. 3 Carter, sec. 33-13s-9e. 10¾-in. csg. 1,461 ft.; drlg. sh. 1,941 ft.

Herton Oil Co. No. 4 Roane, sec. 40-13s-9e. T.D. 5,925 ft.; P.B. sidetracked; drld. to 5,745 ft.; D.S. stuck; washing over.

Jennings—Acadia Parish

Ray Croft No. 2 Houssiere-Latrille, sec. 47-9s-2w. T.D. 1,725 ft.; swbg.

Shell Pet. Corp. No. 2 Community, sec. 40-9s-2w. Drlg. sd. and L. 5,175 ft.

Stanolind O. & G. Co. No. 6 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 7,534 ft.; completing.

Superior Oil Prod. Co. No. 1 Crawley, sec. 42-9s-2w. Drlg. sh. 6,066 ft.

Superior Oil Prod. Co. No. 1 Jennings-Heywood, sec. 41-9s-2w. Drlg. sd. and sh. 5,772 ft.

Lafitte—Jefferson Parish

Texas Co. No. 5 Rigolettes, sec. 29-17s-24e. T.D. 10,942 ft.; stuck pipe while rmg. at 10,932 ft.; milling on junk at 7,087 ft.

Texas Co. No. 6 Lafitte, sec. 20-17s-24e. Dig canal.

Texas Co. No. 1 R. C. Milling, sec. 20-17s-24e. Drlg. sdy. sh. and L. 8,985 ft.

Texas Co. No. 6 Rigolettes, sec. 29-17s-24e. Dig canal.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre State. T.D. 7,948 ft.; fsg.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 6. LaFourche, sec. 11-8s-25e. T.D. 3,039 ft.; sdtrkd.; drlg. 2,786 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 15 State, sec. 17-23s-18e. Drlg. 6,457 ft.

Leesville—LaFourche Parish

Carter-Michael No. 1 E. S. Bernard, sec. 26-21s-22e. Drk.

Gulf Oil Corp. No. 4 City of New Orleans, sec. 26-21s-22e. Drlg. sdy. sh. 4,148 ft.

Texas Co. No. 50 Leesville, sec. 34-21s-22e. Drlg. sd. 6,085 ft.

Texas Co. No. 51 Leesville, sec. 34-21s-22e. T.D. 5,135 f.t; wtr. sd.; rng. Schlumberger.

New Iberia—Iberia Parish

Crysanthon et al No. 1 Gulf fee, sec. 71-12s-7e. T.D. 6,720 ft.; cutting and pulling screen.

H. Fostiades No. 3 Gulf Ld., sec. 25-11s-7e. Drlg. 2,767 ft.

Wm. Hellis No. 4 Boliver, sec. 56-12s-7e. R.U.

Wm. Hellis No. 3 Bullock, sec. 52-12s-7e. Drlg. sdy. sh. 4,080 ft.

Wm. Hellis No. 3 Sabatier, sec. 54-12s-7e. T.D. 2,850 ft.; W.O.C.

Wm. Hellis No. 2 Schwing, sec. 56-12s-7e. Drlg. 6,668 ft.

Kitos et al No. 3 Sealy, sec. 36-12s-7e. 9⅝-in. csg. 874 ft.; S.D.

Texas Co. No. 1 Clementine, sec. 25-12s-1e. T.D. 7,354 ft.; salt; P.B.; sdtrkd. 4,090 ft.; drlg. sh. 5,023 ft.

Texas Co. No. 1 Gragieano, sec. 25-12s-9e. 10¾-in. csg. 62 ft.; T.D. 4,024 ft.; 7-in. csg. 3,975 ft.; I.P. 990 B.P.D. through ⅜-in. ck.; (corrected).

Texas Co. No. 2-B Hanzen, sec. 54-12s-7e. T.D. 4,742 ft.; 7-in. csg. 4,705 ft.

Roanoke—Jefferson Davis Parish

Humble O. & R. Co. No. 3 Thomas, sec. 11-9s-4w. Drk.

Humble O. & R. Co. No. 5-B Devilbiss, sec. 11-9s-4w. T.D. 8,840 ft.; rng. 7-in. csg.; I.P. 24 B.P.H. through ¼-in. ck.

Shell Pet. Corp. No. 6 Kratzer, sec. 12-9s-4w. 10¾-in. csg. 2,454 ft.; drlg. sdy. sh. 7,715 ft.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 Bernard, sec. 9-10s-14e. Drlg. sh. 1,930 ft.

Pan American Prod. Co. No. 7 United Ld., sec. 15-10s-4e. Loc.

St. Martinsville—St. Martin Parish

Continental Oil Co. No. 1 fee, sec. 57-11s-6e. 13⅜-in. csg. 1,387 ft.; drlg. sh. 8,077 ft.

Starks—Calcasieu Parish

J. R. Turnbull No. 1 Industrial Lbr. Co., sec. 20-9s-12w. T.D. 1,150 ft.; rng. 10¾-in. csg.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 834 fee, sec. 20-9s-10w. T.D. 4,469 ft.; P.B. 2,327 ft.; drlg. wtr. sd. 3,558 ft.

Union Sulphur Co. No. 836 fee, sec. 20-9s-10w. T.D. 4,582 ft.; 7-in. csg. 4,561 ft.

Union Sulphur Co. No. 837 fee, sec. 20-9s-10w. T.D. 4,372 ft.; 7-in. csg. 4,354 ft.; I.P. 500 B.P.D. through ¼-in. ck.

Union Sulphur Co. No. 838 fee, sec. 20-9s-8w. Drlg. 4,429 ft.

Union Sulphur Co. No. 841 fee, sec. 29-9s-8w. R.U.

Tepetate—Acadia Parish

Continental Oil Co. No. 1 Ardoin, sec. 33-7s-2w. T.D. 8,313 ft.; I.P. 213 B.P.D. through 5/32-in. ck.

Continental Oil Co. No. 8-A Homeseekers Dev. Co., sec. 29-7s-2w. R.U.

Continental Oil Co. No. 9-A Homeseekers Dev. Co., sec. 29-7s-2w. Drk.

Continental Oil Co. No. 1-G Homeseekers Dev. Co., sec. 22-7s-2w. R.U.

Continental Oil Co. No. 1 L. J. Ortego, sec. 29-7s-2w. Drlg. L. 7,291 ft.

Continental Oil Co. No. 2-B Young, sec. 29-7s-2w. Drlg. sh. 7,650 ft.

Vinton—Calcasieu Parish

Vinton Pet. Co. No. 9 Harmong, sec. 34-10s-12w. T.D. 2,979 ft.; 4½-in. csg. 2,900 ft.

White Castle—Calcasieu Parish

Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. Drlg. sd. and L. 7,142 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. S.D. 5,047 ft.

Humble O. & R. Co. No. 1 Nordyke, sec. 23. Drlg. sd. and gravel 911 ft.

Allen Parish

Humble O. & R. Co. No. 3 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in. csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,766 ft.; shot well; failed to stop flwg. S.W.

Avoyelles Parish

Coastal Mineral Dev., Inc., No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.

George Conover No. 1 Purdy Heff, sec. 36-2n-3e. Drk.

Frost Oil Co. No. 1 Hines Lumber Co., sec. 3-3n-4e. Drk.

Calcasieu Parish

Union Sulphur Co. No. 1 M. P. Erwin, sec. 10-10s-8w. 10¾-in. csg. 1,296 ft.; W.O.C.

Wilfred Lahaye No. 1 Bass, sec. 9-10s-12w. S.D. 80 ft.

Cameron Parish

Magnolia Pet. Co. No. 1 Johnson Bayou sec. 16-15s-14w. T.D. 9,180 ft.; flwd. hot S.W. with 2,400 lbs. W.P.

Magnolia Pet. Co. No. 1 Raymond Lebau sec. 13-12s-9w. 13⅜-in. csg. 3,262 ft.; drlg. sh. 8,300 ft.

Pure Oil Co. No. 1, Mallard Bay, sec. 33-13s-3w. 18⅝-in. csg. 1,499 ft.; drlg. sdy. sh. 6,458 ft.

Southern Sulphur Co. No. 2 State, sec. 39-15s-10w. Drlg. sh. 398 ft.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 40-8s-2e. S.D. 6,623 ft.

Cavalier Oil Co. No. 1 Young, sec. 62-4s

La. Crusader Oil Co. No. 1 State University, sec. 65-7s-1w. Drlg. sh. 3,825 ft.

East Feliciana Parish

East Feliciana Oil No. 1 West & Budding, sec. 37-1s-1w. Spudded 15 ft. and SD

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 1 Wilbert, sec. 67 9s-11e. Drlg. sh. 3,484 ft.

Iberia Parish

Jefferson Lake Oil Co. No. 409 Lake Pigneur, Twp. 12s-3e. T.D. 8,650 ft.; fsg.

Jefferson Lake Oil Co. No. 411 Lake Pigneur, Twp. 12s-3e. S.D. 4,698 ft.

Texas Co. No. 1-M State, Vermilion Bay sec. 16-15s-6e. Drlg. L. 9,234 ft.

Jefferson Parish

Triangle Oil Co. No. 1 Conroe, sec. 135 12s-11e. Drlg. sh. 1,837 ft.

Jefferson Davis Parish

Shell Pet. Corp. No. 1 Joe Sturdivant sec. 25-10s-4w. 10¾-in. csg. 2,616 ft., T.D. 9,747 ft.; fsg. for D.S.

Lafourche Parish

Wm. Helis No. 1 City of New Orleans sec. 19-23s-23e. Drlg. sd. 4,745 ft.

Pan American Prod. Co. No. 1 Harang, sec. 7-17s-20e. Drlg. sh. 3,561 ft.

Livingston Parish

Coastline Oil Co. No. 1 Addison Trus Co., sec. 7-7s-3e. Drlg.

Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 25 22s-19. Drlg. 3,212 ft.

Tide Water Oil Co. No. 2 Manhattan Fruit Co., sec. 34-21s-22e. Drlg. sh. 3,839 ft.

St. Bernard Parish

John Cartwright No. 1 Meraux Nunez, sec. 19-13s-12e. T.D. 6,501 ft.

Gulf Oil Corp. No. 1 Lake Lery, sec. 28-14s-14e. Drlg. sh. 2,816 ft.

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. Drlg. 1,012 ft.

St. James Parish

Shell Pet. Corp. No. 2 Colonial Sugar, 4,800 ft. N of No. 1, sec. 15-12s-5e. Drlg. sh. and L. 7,831 ft.

St. Landry Parish

Stanley Thompson No. 1 Lewis, sec. 29-5s-6e. Drlg. sd. 4,880 ft.

Superior Oil Prod. Co. No. 1 Savoie, sec. 26-8s-3e. Drlg. sh. 8,382 ft.

St. Martin Parish

Shell Pet. Corp. No. 1 Hefia Ld. Co., sec. 38-8s-5e. Drlg. sh. 5,125 ft.

Texas Co. No. 9 St. Martin, sec. 21-8s-7e. Capping piling.

St. Mary Parish

Texas Co. No. 1, Horse Shoe Bayou, sec. 40-17s-9e. Fsg. 8,798 ft.

Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender sec. 23-19s-19e. T.D. 8,378 ft.; P.B. 8,235 ft.

Shell Pet. Corp. No. 1-B Realty, sec. 15-17s-15e. R.U.

Vermilion Parish

Continental Oil Co. No. 1 O. C. Hebert sec. 20-12s-3e. T.D. 11,732 ft.; circulating with mud; well tried to blow out; fsg for stuck D.S.; hole cleaned to 10,680 ft.; set cmt.; P.B. to 10,800 ft.; sdtrkd. at 10,800 ft.; drlg. sh. 11,479 ft.

Delcambre & Shelton No. 1 Delcambre, sec. 63-12s-6e. S.D. 2,708 ft.

Stanolind O. & G. Co. No. 1 Fred Stovall, 13⅜-in. csg. 1,980 ft.; drlg. sh. 8,339 ft.

ARKANSAS

Bradley County

Joe Modisette No. 1 Bird, N half NW NE sec. 28-16-12. Cg. 4,830 ft.

Cleveland County

J. R. Lockhart No. 1 Ida Robertson, SE cor. sec. 36-10-11w. Drlg. 2,645 ft.

Columbia County

King Oil Co. No. 1 Kitchen et al, NE SE NW sec. 13-17-22. Drlg. 3,400 ft.

Dallas County

Walter Lown No. 1 G. Atkinson, NE NW SE sec. 7-10-13. Drlg. 2,354 ft.

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW sec. 23-6-15. Drlg. 1,830 ft.

Hempstead County

Root Pet. Co. No. 1 D. F. Jones, 330 ft. S and W. NE SW NE sec. 16-13-23. M.I.R.

Miller County

Harber & Parks No. 1 Dean, NW SE sec. 24-15-26. Drlg.

Odell Hinson No. 1 Montana Realty Co., 330 ft. S and W NE NW NW sec. 3-17-28 T.D. 5,278 ft.; S.O. 5,276-78 ft.; rng. csg.; rec.; D.P.; 7-in. cmt. 5,270 ft.; T.D. 5,278 ft.

C. V. Lenz No. 7 Dale, O.W.D.D., sec. 34-15-26. T.D. 4,215 ft.; cg. oil sand; prep. set csg.; rng. 7-in. csg.; T.D. 4,215 ft.

Ouachita County

J. D. Reynolds No. 2 M. V. Lenehon, NW SE SW sec. 36-15-16. T.D. 2,014 ft.; W. C.S.R.

Nevada County

Benedum & Trees No. 1 Block, NE NE SE sec. 9-14-20. Drlg.

Benedum & Trees No. 1 Fincher, NW SW NE sec. 10-14-20. Drlg.

Benedum & Trees No. 2 Grove, NE SW NW sec. 10-14-20. Cg. 1,200 ft.

Benedum & Trees No. 3 Grove, SW SE NW sec. 10-14-20. 9-in. cmt. 1,224 ft.; T.D. 1,243 ft.

L. M. Glasco No. 1 Ritchie Est., NW NW SE sec. 10-14-20. Drlg.

John R. Lewis No. 1 W. Haynie, SW SW NE sec. 5-14-20. Loc.

Steel & Warmack No. 1 Wm. Haynie, SE SE NW sec. 6-14-21. S.D. 200 ft.

Pope County

Arkansas-La. No. 1 Smith, sec. 10-8n-21w. Drlg. 3,100 ft.

Pulaski County

G. L. Kilsellman No. 1 fee, SE SE SW sec. 2-1-13. Drlg. 600 ft.

Union County

Penn-Ark. Corp. No. 1 W. N. Rauiston, 330 ft. S and E. NW NW SE sec. 12-17-14. Drlg. 2,803 ft.

S.H.A. Oil Corp. No. 2 E. F. Gregory, SW NE SW sec. 10-17-14 O.W.D.D.; drlg. plug; T.D. 3,437 ft.

Tomblin & Gilbert No. 1 Taylor, sec. 27-19-15. T.D. 2,308 ft.; D.&A.

TEXAS

Week Ending November 28

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 9 Austin College, Wm. Harvey Sur. Drlg. sh. 2,995 ft.

Humble O. & R. Co. No. 3 Duncan, Brazos River Bed Sur. T.D. 4,060 ft.; 5½-in. csg. 3,949 ft.; I.P. 70 B.P.H. through ¼-in. ck.

Humble O. & R. Co. No. 9-B Hardy, J. E. Groce Sur. Drlg. sh. 2,432 ft.

Humble O. & R. Co. No. 5-X Jackson, Wm. C. White Sur. T.D. 4,360 ft.; abd.

Humble O. & R. Co. No. 9 Wilson, Wm. Harvey Sur. T.D. 4,191 ft.; P.B. 3,598 ft.; prep. to pmp.

Hastings—Brazoria County

W. L. Goldson No. 2 fee, B.B.B.&C. Sur. T.D. 6,135 ft.; P.B. 4,620 ft.

Humble O. & R. Co. No. 5 Brown, W. H. Snider Sur. 10¾-in. csg. 1,649 ft.; W.O.C.

Humble O. & R. Co. No. 6 Brown, W. H. Snyder Sur. 10¾-in. csg. 1,622 ft.; T.D. 6,020 ft.; 5¾-in. csg. 6,018 ft.; I.P. 21 B.P.H. through ¼-in. ck.

Humble O. & R. Co. No. 7 Brown, W. H. Snyder Sur. 10¾-in. csg. 1,619 ft.; W.O.C.

Humble Oil & Ref. Co. No. 1 King, H.T.&B. Sur. Drlg.

Showers and Moncrief No. 1 L. Hughey, C of 10-ac. tr., H.T.&B. Sur. No. 20. Drlg. sh. 4,800 ft.

Stanolind O. & G. Co. No. 1 Blount, B. T. Masterson Sur. Drlg.

Stanolind O. & G. Co. No. 6 Drake, H.T.& B. Sur. No. 36. 10¾-in. csg. 1,842 ft.; drlg. sh. 4,400 ft.

Stanolind O. & G. Co. No. 1 Lang, H.T.& P. Sur. No. 29. Drlg. sd. and sh. 967 ft.

Stanolind O. & G. Co. No. 1 Margaret Kidd, B. T. Masterson Sur. T.D. 6,060 ft.; 7-in. csg. 5,995 ft.; I.P. 394 B.P.D. through ¼-in. ck.

Stanolind O. & G. Co. No. 5 Ford, A.C.H.& B. Sur. No. 1 16-in. csg. 90 ft. Drlg. sh. 5,773 ft.

Stanolind O. & G. Co. No. 2 Scott, T.H.& B. Sur. No. 29. Drlg. sh. 1,648 ft.

Stanolind O. & G. Co. No. 1 Sheffield, H. T.&B. Sur. No. 29. Drlg.

Stanolind O. & G. Co. No. 2 Surface, B.B. B.&C. Sur. 10¾-in. csg. 1,874 ft.; W.O.C.

Stanolind O. & G. Co. No. 7 Williams, A.C. H.&B. Sur. No. 1. T.D. 6,080 ft. 7-in. csg. 5,997 ft.; I.P. 595 B.P.D. through ¼-in. ck.

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 K. M. Gibson, J. W. Hall Sur. T.D. 1,315 ft.; W.O.C.

Gulf Oil Corp. No. 1 Fred Reiss, J. W. Hall Sur. Drlg. sh. and L. 3,639 ft.

Shell Pet. Corp. No. 1 Prison Farm, J. W. Hall Sur. Loc.

Manvel—Brazoria County

Bowles & Borsodi No. 4 Norvell Co., Inc., H.T.&B. Sur. No. 23. R.U. and S.D.

Harrison & Abercrombie No. 3 Lewellen, Lot 15, A.C.H.&B. Sur. Drlg. 2,000 ft.

Philtop O. & G. Co. No. 1 R. W. Frost, C Lot 117, E. Little Sur. T.D. 4,129 ft.; S.D.

Sterling Oil & Ref. Co. No. 1 Hamilton, E. Little Sur. T.D. 4,060 ft.; 7-in. csg. 3,966 ft.; comp.; I.P. 20 B.P.D.

E. A. Stone No. 1 Nichols, E. Little Sur. Drk.

Texas Co. No. 1 A. Ellis, H.H. Little Sur Old T.D. 5,738 ft.; sdtrkd. 3,539 ft.; drlg. sh. 5,002 ft.

Texas Co. No. 5 Leider, H. N. Little Sur. Drk.

Old Ocean—Brazoria County

Harrison and Abercrombie No. 3 Bernard River, Charles Breen Sur. Drlg. sh. and L. 4,037 ft.

Heyser—Calhoun County

Humble O. & R. Co. No. 4 E. H. Welder, J. M. Rios Sur. T.D. 5,470 ft.; tstg.

Humble O. & R. Co. No. 5 P. H. Welder, A. Sisneros Sur. T.P. 4,876 ft. Making D.S.T.; T.D. 5,475 ft.; W.O.C.

Humble O. & R. Co. No. 6-A P. H. Welder, J. M. Rios Sur. R.U.

Portilla Oil Co. No. 1-C P. H. Welder, A. Sisneros Sur. T.D. 5,470 ft.; 7-in. csg. 5,470 ft.

Portilla Oil Co. No. 3 Welder, Sisneros Sur. R.U.

Anahuac—Chambers County

Humble O. & R. Co. No. 3 Boyt, sec. 44, H.&T.C. Sur. Drlg. sh. 5,151 ft.

Humble O. & R. Co. No. 10 Broussard-Hebert, sec. 59, H.&T.C. Sur. Drk.

Humble O. & R. Co. No. 11 Broussard-Hebert, sec. 59, H.&T.C. Sur. Loc.

Gulf Oil Corp. No. 4 Knowles, sec. 48, H. &T.C. Sur. 7-in. csg. 7,081 ft.; T.D. 7,175 ft.; comp. for gas well.

Gulf Oil Corp. No. 5 Knowles, sec. 48, H. &T.C. Sur. Abd. loc.

Gulf Oil Corp. No. 1 Pommer, sec. 46, T.D. 7,127 ft.; oil sd.; making D.S.T.

Gulf Oil Corp. No. 1 Wilcox, sec. 48, H.& T.C. Sur. R.U.

Humble O. & R. Co. No. 5 Engels, sec. 50, H.&T.C. Sur. 9⅝-in. csg. 1,541 ft.; T.D. 7,085 ft.; 5½-in. csg. 7,040 ft.; I.P. 29 B.P.H. through ¼-in.

Humble O. & R. Co. No. 4 Marshall, sec. 50, H.&T.C. Sur. 10¾-in. csg. 1,530 ft.

Humble O. & R. Co. No. 6-B White, James McGahey Sur. T.D. 7,129 ft.; 5½-in. csg. 7,121 ft.; drlg. plug.

Humble O. & R. Co. No. 15 White, J. McGahey Sur. T.D. 7,045 ft.; 5½-in. csg. 7,013 ft.; I.P. 18 B.P.H. through ¼-in. ck

Humble O. & R. Co. No. 18 White, J. McGahey Sur. Drlg. sh. 4,310 ft.

Sun Oil Co. No. 2 Myra White, James McGahey Sur. R.U.

Cotton Lake—Chambers County

R. W. Fair No. 1 Ben Dutton, A. B. J. Winfree Sur. Drlg. sh. and L. 4,110 ft.

Glenn H. McCarthy No. 5 Kilgore, J. Townsend Sur. T.D. 6,309 ft.; 5½-in. csg. 6,304 ft.; tstd. S.W. and oil; tstg. 6,292-98 ft.

Glenn H. McCarthy No. 6 Kilgore, J. Townsend Sur. 9⅝-in. csg. 1,800 ft.

Glenn H. McCarthy No. 7 Kilgore, J. Townsend Sur. Drk.

Humble O. & R. Co. No. 2 Howard, Winfree Sur. Loc.

Glenn H. McCarthy No. 1 Kirby, Chambers Co. Sch. Ld. Co. Sur. Abd.

Salt Dome Oil Co. No. 1-A Lawrence, Solomon Barrow Sur. Drlg. 860 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 4 State, due S of Sun Oil Co. No. 1 Chambers in Turtle Bay. Drk.

Sun Oil Co. No. 3 Chambers, Chambers County Sch. Ld. Drlg. sh. 1,252 ft.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 72 Davis, M. Young Sur. Drk.

Jenal Oil Co. No. 3 Byron, M. Young Sur. T.D. 3,736 ft.; 7-in. csg. 2,850 ft.; P.B. 2,740 ft.; drld. to 2,552 ft.; P.B. 2,344 ft.; W.O.C.

Thompson Drlg. Co. No. 1 W. C. Moore, B. Wickerson Sur. S.D. 3,690 ft.

Blue Ridge—Fort Bend County

Barnett Pet. Co. No. 1-B Blakely, Lot 7, Blk. E, Drew Sur. T.D. 3,770 ft.; 7-in. csg. 3,752 ft.; perf. csg. 3,604-11 ft.; and 3,696-3,410 ft.; swbd. oil and gas.

Texas Gulf Prod. Co. No. 14-B Blakely, J. Foitivent Sur. Drlg. sdy. sh. 5,644 ft.

Boling—Fort Bend County

Mack Hank Oil Co. No. 2-A Farmer, J. Scott Sur. T.D. 4,433 ft.; P.B. and sidetracked; drlg. sh. and L. 3,966 ft.

H. K. Spear et al No. 1 Kasperek, Simon Miller Sur. 7-in. csg. 3,960 ft.; T.D. 4,015 ft.; P.B. 3,882 ft.; swbd. S.W.; pulling tbg. to test.

Orchard—Fort Bend County

Gulf Oil Corp. No. 48 Moore, J. Frazier Sur. T.D. 3,695 ft.; 1-in. csg. 3,652 ft.; I.P. 235 B.P.D. through ¼-in. ck.

Gulf Oil Corp. No. 49 J. M. Moore, Germain Immg. No. 8, R.U.; spudded 32 ft.

Thompson-Fort Bend County

J. N. Rayzor No. 1 Grimes, Kennedy Sur. T.D. 856 ft.; W.O.C.

High Island—Galveston County

Stanolind O. & G. Co. No. 9-B Cade, M. Dunman Sur. T.D. 5,247 ft.; 7-in. csg. on bottom; perf. csg. 5,180-5,200 ft.; I.P. 109 B.P.D.; swbg.; R.U. to pmp.

Stanolind O. & G. Co. No. 58 Cade, N. Fitzsimmons Sur. Drlg. sh. 5,653 ft.

Stanolind O. & G. Co. No. 60-A Cade, M. Duncan Sur. Drk.

Stanolind O. & G. Co. No. 59-A M. Fitzsimmons Sur. Drlg. sh. and L. 4,974 ft.

Dickinson—Galveston County

Coast Pet. Co. No. 4 Stewart, W. K. Wilson Sur. Cg. 8,710-35 ft.

Humble O. & R. Co. No. 1 Boone, W. K. Wilson Sur. 16-in. csg. 313 ft.; T.D. 8,104 ft.; recvd. 3 thrib. of oil and 2 thrib. of gas-cut mud on D.S.T. 8,058-75 ft.; 7-in. csg. 8,058 ft.

Humble Oil & Ref. Co. No. 12-A Stewart, W. K. Wilson Sur. Drlg. sh. 7,920 ft.

Kenben Oil Co. No. 3 Stewart, W. K. Wilson Sur. Loc.

Kenco Corp. No. 1 Stran, J. S. Sherman Sur. Drlg. sh. 5,360 ft.

Pan American Prod. Co. No. 2 Craig, W. K. Wilson Sur. T.D. 8,620 ft.; wet gas; will shut in.

Sinclair Prairie Oil Co. No. 1 W. Weems, W. K. Wilson Sur. Loc.

Smith and MacDannald No. 1 Shelar, J. O. Jones Sur. 16-in. csg. 120 ft.; 10¾-in. csg. 981 ft.; T.D. 8,035 ft., oil sd.; P.B. 8,020 ft.; W.O.C.

Greens Lake—Galveston County

Sun Oil Co. No. 5 Hughes, W. M. C. Baker Sur. T.D. 2,722 ft.; rmg.

Arriola—Hardin County

Republic-Houston Oil Co. No. 14 fee, E. Arriola Sur. 13⅜-in. csg. 835 ft.; T.D. 3,285 ft.; 9⅝-in. csg. 3,270 ft.; I.P. 179 B.P.D.; pmpg.

Batson—Harding County

Deering et al No. 5 Hooks, Donoho Sur. Drlg. Lz 4,544 ft.

Deering et al No. 4 W. W. Cruse, F. H Green Sur. T.D. 5,506 ft.; 7-in. csg. 5,489 ft.; sanded up; pulling rods and tbg.

Fairbanks—Harris County

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1-A Dopslauf, A. Fry Sur. T.D. 6,845 ft.; rng. 7-in. csg.; P.B.; T.D.6,839 ft.; perf. csg. 6,825-27 ft.; I.P. 41 bbls. in. 4 hrs. through 11/64-in. ck.; grav. 39.

Goose Creek—Harris County

Humble O. & R. Co. No. 53 Gaillard, Wm. Scott Labor. R.U. to pmp.; T.D. 1,258 ft.

Humble O. & R. Co. No. 54 Gaillard, Wm. Scott Labor. T.D. 1,325 ft.; 7-in. csg. 1,512 ft.; W.O.C.

Mykawa—Harris County

Flanagan Prod. Co. No. 2 Minnetex, W. J. Lovett Sur. Drk.

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

South Houston—Harris County

E. A. Showers No. 3 Tate, H.T.&B. Sur. No. 6. T.D. 4,020 ft.; 7-in. csg. 3,930 ft.

Stanolind O. & G. Co. No. 2 Buts, H.T.&B. Sur. No. 6. Loc.

Stanolind O. & G. Co. No. Drlg. Dist. No. 47. 10¾-in. csg. 1,451 ft.; drlg. sh. 4,061 ft.

Stanolind O. & G. Co. No. 1, District No. 11. 10¾-in. csg. 1,449 ft.; T.D. 4,545 ft.; P.B.

Tomball—Harris County

Duffie Smith-Koury No. 1 Hillegeist, J. Houst Sur. 10¾-in. csg. 610 ft.; S.D. 5,664 9ft.; perf. csg.

Humble Oil & Ref. Co. No. 1 Briggs, B. Smith Sur. 10¾-in. csg. 947 ft.; T.D. 5,558 ft.; 7-in. csg. 5,554 ft.; I.P. 17 B.P. H.; ¼-in. ck.

Humble O. & R. Co. No. 5 H. S. Gebhard, W. Perkins Sur. Drk.

Humble O. & R. Co. No. 6 Holderrieth, J. Fruitt Sur. Drk.

Humble O. & R. Co. No. 3 C. H. Mueller, T. A. Duclose Sur. Drk.

Humble O. & R. Co. No. 8-A Quilter, A. Senschal Sur. 5½-in. csg. 5,548 ft.; T.D. 5,559 ft.; jetting with gas; no gauge.

Humble O. & R. Co. No. 15 J. D. Reid, C. Goodrich Sur. R.U.

Humble O. & R. Co. No. 1 Tomball Townsite. 9⅝-in. csg. 936 ft.; T.D. 5,573 ft.; 5½-in. csg. 5,568 ft.; I.P. 7 B.P.H. through ¼-in. ck.

Humble O. & R. Co. No. 1 Townsite Unit 18, W. Hurd Sur. Drlg. sh. 2,870 ft.

Humble O. & R. Co. No. 1 Wyatt, J. Pruitt Sur. Drlg. sh. 978 ft.

Amelia—Jefferson County

Humble O. & R. Co. No. 1 Phelan, C. Williams Sur. Top oil sd. 6,734 ft.; T.D. 6,781 ft.; 7-in. csg. 6,781 ft.

Glenn H. McCarthy No. 1-B Longe, H. Williams Sur. T.D. 2,005 ft.; rng. 9⅝-in. csg.

Glenn H. McCarthy No. 2-B Longe, H. Williams Sur. Cd. 3 in. oil sd. 5,415 ft.

Glenn H. McCarthy No. 1-H Longe, H. Williams Sur. T.D. 6,106 ft.; 5½-in. csg. 6,100 ft.; I.P. 524 B.P.D. through ¼-in. ck.

Stanolind Oil & Gas Co. No. 1 Sarge, H. Williams Sur. Drlg. sh. 5,237 ft.

Texas Co. No. 1 Yount, A. Houston Sur. 10-in. csg. 1,236 ft.; T.D. 8,501 ft.; fsg.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 1 Fitzhugh, Mc-Faddin Sur. R.U.

Fannett—Jefferson County

Gulf Oil Corp. No. 11 Burrell, W. H. Smith Sur. Drlg. sd. and rck. 2,199 ft.

Nome—Jefferson County

Shell Pet. Corp. No. 2 Carpenter, M. E. Peveto Sur. T.D. 6,055 ft.; I.P. 497 B.P. D. through ¼-in. ck.; T.P. 625 lbs.

Shell Pet. Corp. No. 2 Paggi, Peveto Sur. R.U.

Sun Oil Co. No. 3 Paggi, J. W. Kirby Sur. Drlg. sh. 3,885 ft.

Texas Canadian Oil Co. No. 1 Ward and Ward, A. Horton Sur. Loc.

Cleveland—Liberty County

Gulf Oil Corp. No. 16-C Kirby, R.U.

Hankamer—Liberty County

Gulf Oil Corp. No. 1 Bernice Hankamer, T.D. 4,331 ft.; R.U. to pmp.

Hull—Liberty County

Eclipse Oil Co. No. 1 Barrow. T.D. 5,014 ft.; cutting and pulling tbg.
Gulf Oil Corp. No. 22 Baldwin, J. Devore Sur. Loc.
Gulf Oil Corp. No. 71 Phoenix. T.D. 4,10' ft.; 5-in. csg. 3,731 ft.; T.D. 3,587 ft.; R.U. to pmp.
Gulf Oil Corp. No. 114 Phoenix, J. Devore Sur. Loc.

Esperson—Liberty County

General Crude Oil Co. No. 21, Moores Bluff M. Duncan Sur. Cg. oil sd. 4,109 ft.
General Crude Oil Co. No. 25 Moores Bluff. M. Duncan Sur. R.U.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 J. H. Crocke E. Hall Sur. 13⅜-in. csg. 1,260 f' 9⅝-in. csg. cmtd. at 6,500 ft.; drlg. sh. 8,000 ft.

Hawkinsville—Matagorda County

Sun Oil Co. No. 2 Craig, T. Williams Sur Top salt 796 ft.; drlg. salt 1,640 ft.

Markham—Matagorda County

Hamill and Hamill No. 6 Hudson, Henry Parker Sur. Recovered S.W. 4,250-65 ft.; T.D. 4,444 ft.
Powers Prod. Co. No. 5 Myers, Wm. Hadden Sur. T.D. 4,590 ft.; 5-in. csg. 4,038 ft.
Superior Oil Co. No. 1-B Hawks, W Gainer Sur. T.D. 6,055 ft.; tstd. S.W. through perf. csg. 4,518-32 ft.
Texas Gulf Prod. Co. No. 1 Hudson, Henry Parker Sur. Spudded.

Van Vleck—Matagorda County

Skelly Oil Co. No. 11-B Cobb, M. Cummins Sur. Drlg. sh. 7,805 ft.
Skelly Oil Co. No. 12-B Cobb, M. Cummins Sur. Drlg. sh. and sd. 7,440 ft.
Skelly Oil Co. No. 13-B Cobb, M. Cummins Sur. Drlg. sdy. sh. 7,135 ft.

Conroe—Montgomery County

Adeltex Oil Co. No. 1 Lewellen, R. G Hunter Sur. Drk.
Humble O. & R. Co. No. 1 Urech, R. Kuykendall Sur. 9⅝-in. csg. 491 ft.; W.O.C.
A. U. Morrison No. 2 McComb, L. Smith Sur. 10¾-in. csg. 750 ft.; T.D. 5,070 ft.; 7-in. csg. 5,059 ft.; I.P. 554 B.P.D. through ¼-in. ck.
Strake Pet. Corp. No. 16 Keystone, L. Smith Sur. T.D. 5,053 ft.; 7-in. csg. 5,030 ft.; I.P. 551 B.P.D. through ¼-in. ck.
Sun Oil Co. No. 23 Keystone, L. Smith Sur. R.U.

Orange—Orange County

B. Turnbull No. 1 Lutcher Moore. J. Dyson Sur. T.D. 7,094 ft.; 7-in. csg. 6,975 ft.; P.B. 6,113 ft.; perf. csg. 5,585-5,605 ft.; I.P. 15 bbls. P.L.O. per day through ¼-in. ck.

Ace—Polk County

Peyton Bros. No. 1-B Kirby West Lmbr. Co., G. S. Thomas Sur. R.U.

Greta—Refugio County

Hewitt & Daugherty No. 34 Lambert, Swisher Sur. Drlg. 5,454 ft.
Hewitt & Daugherty No. 35 Lambert, Swisher Sur. Drlg. 3,626 ft.
Houston Oil Co. No. 20 Heard, Swisher Sur. T.D. 4,918 ft.; 7-in. csg. 4,090 ft.; comp. for gas well.
United Gas Co. No. 31 Lambert, Hew Sur. T.D. 5,910 ft.; W.O.C.
United Gas Co. No. 32 Lambert, Swisher Sur. Drlg. 3,970 ft.

Quintana-O'Connor—Refugio County

Quintana Oil Co. No. 2 Heard, Ximines Sur. T.D. 5,930 ft.; I.P. 1,200 B.P.D. through ¼-in. ck.
Quintana Oil Co. No. 8-C O'Connor, Main Sur. Drlg. sh. 5,215 ft.
Quintana Oil Co. No. 41-A O'Connor, Swisher Sur. Cg. 5,487 ft.
Quintana Oil Co. No. 2-A Reilly, Ximines Sur. Drlg. 3,000 ft.

Keran—Victoria County

Gulf Oil Corp. No. 9 Keran, M. Delean Sur. R.U.

Placedo—Victoria County

American Liberty Oil Co. No. 5 Cortez, J. M. Brownson Sur. No. 8. Drk.
Barnsdall-American Liberty Oil Co. No. 5 J. M. Pickering, S.A.&M.G. Sur. Drlg. sh. 500 ft.
Barnsdall-American Liberty Oil Co. No. 1 Pickering and Roos, S.A.&M.G. Sur. Drlg. sh. 3,500 ft.
Commonwealth Oil Co. No. 4 Prencia, J. M. Brownson Sur. No. 8, Lot 81. M.I.M.
Harrison and Abercrombie No. 5 Vess, J. M. Brownson Sur. T.D. 4,765 ft.; W.O.C.
Magnolia Pet. Co. No. 2 Henderson and Pickering, Wm. Rupley Sur. T.D. 4,792 ft.; P.B. 4,700 ft.; T.D. 4,775 ft.; 7-in. csg. 4,732 ft.
Ownby No. 4 Malek, S.A.&M.G. Sur. Drk.
Westgate Oil Co. No. 5 Mieska, S.A.&M.G. Sur. T.D. 4,775 ft.; I.P. 61 bbls. in 12 hrs.; ¾-in. ck
Clay Creek—Washington County

Pompkal et al No. 3 Klatle. S.D. 576 ft.
Sun Oil Co. No. 1 H. Lauter, N. Clay Sur 7-in. csg. 7,445 ft.; swbd. and flwd. 10 bbls. of oil in 10 hrs.; now closed in.
Sun Oil Co. No. 18 Janner, J. F. Perry Sur. Cg. 1,603 ft.

Louise—Wharton County

Pure Oil Co. No. 2 Adams, T. W. Heard Sur. T.D. 5,158 ft.; P.B. 5,142 ft.; comp. for dry gas well.
Pure Oil Co. No. 5 Stewart, Morris and Cummins Sur. No. 25. R.U.
Pure Oil Co. No. 4 Weaver, J. M. Brownson Sur. No. 22. R.U.

Magnet—Wharton County

P. B. Watson No. 1 Sweet, Smith and McKinzie Sur., Lot 4, Blk. 84. T.D. 5,488 ft.; blew out while rmg.; hole cratered; rig moved off.

Pickett Ridge—Wharton County

Texas Co. No. 3 Nilson, I.&G.N. Sur. No. 307. R.U.

Withers—Wharton County

Texas Co. No. 15-C Pierce, J. Caldwell Sur. T.D. 5,559 ft.; 7-in. csg. 5,551 ft.; W.O.C.
Texas Co. No. 16-C Pierce, Wm. Pettis Sur. T.D. 5,558 ft.; 7-in. csg. 5,550 ft.; I.P. 12½ B.P.H. through 12/64-in. ck.
Texas Co. No. 17-C Pierce, Wm. Pettus Sur. Drlg. sh. 5,046 ft.
Texas Co. No. 18-C Pierce, Wm. Pettus Sur. R.U.

GULF COAST WILDCATS

Austin County

R. L. Hopkins No. 1 J. W. Recnecke, J. Stephenson Sur. R.U.
W. H. Mitchell et al No. 1 F. Fenner, J Fitzgibbons Sur. S.D. 3,417 ft.

Brazoria County

Beatty, Bowles and Borsodi No. 1 Truska Lot 4, Blk. 8, H.T.&B. Sur. Cg. ahead 6,412 ft.
Texas Co. No. 1 Robbins, J. W. Broughan Sur. 11¾-in. csg. 4,950 ft.; T.D. 6,637 ft.; drlg. sh. 6,451 ft. in sidtrkd. hole.

Calhoun County

Matagorda Oil Co. No. 1 Brundet, Tr. 8, Matagorda Island. 13⅜-in. csg. at 1,826 ft.; W.O.C.

Chambers County

Laverne Deeker No. 1 Johnson, M. O. Perkins Sur. No. 30. Drk.
Sun Oil Co. No. 2 Hamilton, J. T. White Sur. 13⅝-in. csg. 1,385 ft.; T.D. 8,869 ft.; 8⅝-in. csg. at 8,715 ft.; W.O.C.

Colorado County

Coyle-Concord & Sterling No. 1 Mary E South, I.&G.N. Sur., sec. 41. T.D. 6,139 ft.; 5½-in. csg. 6,127 ft.; P.B. 6,127 ft.; tested drlg. mud through perf. csg. from 6,001-55 ft.; S.D.

Fort Bend County

Sam Harrison No. 1 Victor Horak, H.&T. C. Sur. No. 36. Loc.
Sloan and Zook No. 1 J. A. Brown et al, Barrett and Harris Sur. 10¾-in. csg. 1,140 ft.; abd. 6,500 ft.

Galveston County

Shell Pet. Corp. No. 1 Maco Stewart, Spillman Sur. 9⅝-in. csg. 7,707 ft.; T.D. 10,460 ft.; P.B. 9,162 ft.; W.O.O.

Grimes County

Fred Harris No. 1 J. C. Chaney, W. Donoho Sur. 10¾-in. csg. 100 ft.; W.O.C.

Hardin County

Republic-Houston Oil Co. No. 2 Brooks, G. W. Brooks Sur. (relief well). Cmtd. 7-in. csg. 7,027 ft.; T.D. 7,071 ft.; hole cleaned to 2,400 ft.; sdtrkd.; drlg. sd. and sh. 6,972 ft.
Republic Prod. Co.-Houston Oil Co. No. 3 fee, G. W. Brooks Sur. Drlg. sdy. L. 5,496 ft.

Harris County

D. B. Cherry et al No. 1 Bert J. Dodge, Josiah Harrell Sur. S.D. 1,660 ft.
Farrel and Cox No. 1 Bender, N. W. Travis Sur. R.U.
George Lawrence et al No. 1 Zoppa, J. Farwell Sur. 10¾-in. csg. 605 ft.; T.D. 3,047 ft.; P.B.; W.O.C.

Jefferson County

D. B. MacDaniel No. 1 J. N. Gilbert Est., J. Ricard Sur. Bldg. roads.
Sun Oil Co. No. 1 Broussard & Hebert, T.&N.O. Sur. T.D. 7,607 ft.; rmg.

Lavaca County

Dole Pet. Co. No. 1 Reed-Nollkamper, A Smothers Sur. S.D. 2,395 ft.
Welshire Union Oil Co. No. 1-A Pohl, F. Bass Sur. Drk.

Liberty County

J. G. Mayo et al No. 1 Dunman, John Cherry Sur. Drlg. sh. 860 ft.

Matagorda County

Continental Oil Co. No. 1 Hawkins, D. McCarthy Sur. M.I.R.
Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. Drk.
Jack Frazier No. 1 R. A. Estill, Tone and Jameson Sur., O.W.D.D.; T.D. 6,868 ft.; P.B. 5,331 ft.; sdtrkg.; drlg. sh. 5,500 ft.
Strake Pet. Co. No. 1 G. T. Sargent, L. E. Parker Sur. 13⅜-in. csg. 1,607 ft.; drlg. sh. 6,580 ft.
Tetts & Harris No. 1 Pierce, Lot 23, W. E. Wallace Sur. S.D. 7,723 ft.
Texas Gulf Prod. Co. No. 1 Wadsworth, D. McCarthy Sur. O.W.D.D.; T.D. 8,853 ft.

Montgomery County

Chapman No. 1 Foster, D. Pevy House Sur. 10¾-in. csg. 42 ft.; T.D. 1,303 ft.; W.O.C.

Polk County

J. F. Dorrance et al No. 1 Sarah Wings, sec. 15, I.&G.N. Sur. Spudded and S.D. to finish; drlg. sh. and L. 3,513 ft.

Refugio County

Tide Water Oil Co. No. 1 Landgarf, J. Collyer Sur. Cg. 7,201 ft.

Trinity County

Cortez Oil Co. No. 1 V. and R. Kennedy, J. M. Prado Sur. R.U.

Tyler County

Republic Prod.-Houston Oil Co. No. 1 Hurd, Norman Hurd Lge. 16-in. csg. 47 ft.; 10¾-in. csg. 1,649 ft.; drlg. sh. 5,842 ft.

Victoria County

Magnolia Pet. Co. No. 1 Willie Beck, T. &N.O. Sur. 13⅜-in. csg. 920 ft.; drlg. sh. 3,894 ft.
Plymouth Oil Co. No. 1 J. J. Welder, S. A. Balding Sur. T.D. 6,648 ft.; P.B. and st.; drlg. 4,300 ft.

Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.
Roswell Oil Co. No. 1 J. Bosborn, J. Jordan Sur. S.D. 520 ft.; no report.

Washington County

Stapper Pet. Corp. No. 1 W. H. Hoxie, S. Clampit Sur. Cg. sd. and sh. 1,544 ft.

Wharton County

Felmont Oil Corp. No. 1 G. Mitchell, D. Wade Sur. T.D. 8,065 ft.; fsg.
Shell Pet. Corp. No. 1 Gus Sedyler, F. Biggam Sur. 8⅝-in. csg. 1,155 ft.; drlg. sd. rock 5,389 ft.

S. W. TEXAS WILDCATS

Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. Spudding in.
Helvetia Oil Co. No. 2 S. Pratt, 333 ft. SE and SW lines tr., Garza Sur. 46. Top Serp. 3,085 ft.; set csg. 3,100 ft.; to test.
McNeill Pet. Corp. No. 1 Tom, 5 mi. N of Whitsett. Cg. 823 ft.
L. G. Priest No. 1 Sanders, Garmon Sur. Drlg. 1,127 ft.
Rogers & Rogers No. 1 McLain, Trevino Sur. 79. Cd. sdy. sh. S.O. 1,510-1,638 ft.; sat. oil sd. 1,638-75 ft.; set csg. 1,510 ft.; swbd. dry; stdg.

Bastrop County

Lee P. Ross No. 1 Caldwell, 10 mi. S of Bastrop. Recmtg. 7-in. csg. 2,424 ft.

Bee County

LaSalle Oil Co. No. 1 Ray, 360 ft. E line, 330 ft. N line, 40-ac. tr., Anna Burks Sur. Sdtrkd. 1,192 ft.; drlg. in sdtrkd. hole 1,926 ft.
Luling O. & G. Co. No. 1 Borrown, 2,550 ft.NW line, 250 ft. NE line, 450-ac. tr., Baker Sur. Loc.

Bexar County

Mayer & Smith No. 1 Bass, F. A. Ruiz Sur. D.&A. 1,363 ft.

Brooks County

California Co. No. 2-B Garcia, 1,895 ft. N line, 330 ft. W line, Tr. 3, La Mestina Gr. Drlg. 1,376 ft.
Douglass & Burden, Inc., No. 1 Haller, 300 ft. S and W lines, Sur. 436. S.D. 810 ft.

Burleson County

M. R. Exploration Co. No. 2 Fountain, Wm. Raleigh Sur. D.&A.; T.D. 6,504 ft.
M. R. Exploration Co. No. 3 Fountain, Wm. Raleigh Sur. M.I.M.
Red Bank Oil Co. No. 1 Grann, 2,875 ft. S line, 1,500 ft. E line, E. Santel Sur. Cg. 6,156 ft.

Duval County

H. F. Gillaspie No. 1 Perez, Sur. 282. T.D. 5,618 ft.; D.&A.
Magnolia Pet. Co. No. 1 Labbe ranch, 2,330 ft. W line, 2,586 ft. N line, Ise., Sur. 221. R.U.
Mills Bennett Prod. Co. No. 4 Yates, Sur. 467. Drlg. 2,506 ft.
Oliver Oil Co. No. 1 Luby, Sur. 146. Loc.
Albert Plummer No. 1 Danmier, 990 ft. S line, 330 ft. W line, NE¼, Sur. 58. S.D. 3,006 ft.
Texas Co. No. 1-C D.C.R.C., sec. 194. Set csg. 90 ft.; W.O.C.
Thomas No. 2 Parr, NE¼, Sur. 2. Set surf. csg.; W.O.C.

Edwards County

Plateau Oil Co. No. 1 R. L. Hatch, sec. 66. J. W. May Sur. Drlg. 2,860 ft.

Fayette County

Paul Teas No. 1 Clement Vinklarek, S. Millett Lge. Set csg. in Edwards 7,142 ft.; S.O.; to perf. 7,122-39 ft.

Goliad County

Rual Singer No. 1 C. Wood, Geo. Villa Sur. Loc.
Sun Oil Co. No. 1 Fromme, 330 ft. N line tr., 330 ft. W line, A. Martle Sur. Drlg. 5,072 ft.
H. H. Weinert, Inc., No. 4 Runge Loan Co., B.&B. Sur. 36. R.U. and S.D.

Gonzales County

M. S. Holliday No. 1 Edwards, W. W Page Lge. Sd. 562-69 ft.; S.O.; M.I.M.
Marts & Beavens No. 1 Martindale, J. Robertson Sur. Drlg. 3,563 ft.

Guadalupe County

Paul Armstrong No. 1 Tiller, J. C. King Sur. S.D. 1,767 ft.
Chas. Culver No. 1 Vornhal, Geo. Edwards Sur. T.D. 2,525 ft.; D.&A.
Detroit-Texas Dev. Co. No. 1 Carter, 625 ft. SW line, 170 ft. NW line, 3,000-ac. tr. T.D. 2,356 ft.; S.O.; swbg.
W. J. Dobbs No. 1 Jahns, Davis Sur. D.&A. 2,361 ft.
J. Harper No. 1 Loepp, Drna Sur. Spdded.
Francis P. Hynes No. 1 Linne, 415 ft. NW line, 250 ft. SW line, 224-ac. tr., Reese Sur. Drlg. 1,813 ft.
Long & Ross No. 1 Feltz, Dunn Sur. T.D. 633 ft.; S.O.

Hidalgo County

H. J. Porter No. 2 Sweeny Est., Lot 1, Wayne Wood Subd. No. 2. Drlg. sh. 4,478 ft.

Jim Hogg County

Theo. Hicks No. 1 Kohler, sec. 9, Noriscitas Gr. Drlg. 3,586 ft.
S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Jim Wells County

Gist & Graddy No. 1 Owens, 660 ft. N line, midway E and W lines Sur. 151. Set 7-in. csg. 2,340 ft.; fsg. 5,306 ft.
G. Tzelmelia (Putnam & Stewart) No. 1 Canales, C Blk. 32, Mosser Subd. (reinstated). Drlg. 4,357 ft.

Karnes County

R. L. Barnett No. 2 fee, 568-ac. tr., Hunter Sur. Cg. 2,913 ft.
De Graff & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell Lge. R.U. and S.D.

LaSalle County

W. H. Vernon No. 1 Las Abias ranch, 150 ft. N line, midway E and W lines, sec. 726. S.D. 800 ft.

Lee County

Pederson et al No. 1 Turner, David Hudson Sur. T.D. 6,560 ft.; milling 4,600 ft. to sdtrk.

Live Oak County

J. H. Durbin No. 4 Marbach, S. Hays Sur. Sd. 917-22 ft.; set csg.; W.O.C.
Hagen & Stewart No. 1 S. A. Joint Stock Ld. Bank, 800-ac. tr., John Turner Sur. Drlg. 97 ft.
Loma Oil Co. No. 3 Withers, J. Spark Sur. Spudded.
Sun Oil Co. No. 1 James, Pat McGlover Sur. Drlg. 4,317 ft.

McMullen County

L. D. Ormsby No. 11 Griffith, B. Sparks Sur. D.S.T. 935-40 ft.; showed 90 ft. of mud and oil; no wtr.

Medina County

Joice Oil Co. No. 1 Medina Irr. Farm Lds., Lot 1, Blk. 34, San Antonio Trust Subd. Abd. 240 ft.; skdg. over for second test.
A. Chmel, No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.
W. H. Wycoff No. 1 Bendele, 1,275 ft. W line, 150 ft. N line, Joe Barnhart Sur. 593. Drlg. 321 ft.

Nueces County

Allen and Seaboard Oil Corp. No. 1 Chapman, 660 ft. N and E lines, sec. 86, Laureles Farm Trs., Rincon de Corpus Christi Sur. Drlg. 6,156 ft.
Cosner & Cosner No. 1 Stockton, 330 ft. S and W lines, NE¼, sec. 25. Sd. 4,720-26 ft.; tested 700 ft. oil and 500 ft. S.W.; cg. 4,857 ft.
Renwar Oil Corp. No. 1 Willoughby, 3,500 ft. SE N cor. 860-ac. tr., 330 ft. Petrovilla tr., sec. 4-G, Garrett Subd. Drlg. 1,472 ft.
Steve Paul No. 1 Smith, 1,650 ft. E line, 330 ft. S line, sec. 38, Flour Bluff Encinal Trs. Loc.
G. M. Richardson No. 1 Carter, C NW¼, SE¼, sec. 8, Laurels Farms Trs. T.D. 5,680 ft.; S.D.

Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. Drlg. 1,323 ft.

San Patricio County

Eleanor Oil Co. No. 1 Kline, Lot 5, Blk. "C," Coleman-Fulton Pasture Subd. T.D. 6,840 ft.; S.D.
Eleanor Oil Co. No. 1 W. W. Toland, sec. 15, Blk. A, Coleman-Fulton Pasture Subd. M.I.M.
Hooper-Rutherford, Inc. No. 1 J. D. Willis, 466 ft. S and W lines tr., Williamson Sur. Cg. 6,351 ft.
Texon Drlg. Co. No. 1 Harvey, 330 ft. N and W lines, Blk. 13, Rincon Subd., Sargent Sur. Set csg. 810 ft.; W.O.C.
Windsor Oil Co. No. 1 Bissett, Tr. 3, Tivoli Subd., Crockett Sur. Loc.

Starr County

J. F. Anderson No. 1 Yzagierre, Tr. 1, Porc. 79, J. of Camargo. T.D. 2,910 ft.; resume drlg.
H. L. Bass No. 1 Haden. 3,740 ft. S line, 555 ft. W line, Sh. 47, Porc. 80. Set 5½-in. csg. 1,336 ft.; to test.
J. H. Brower No. 1 Saenz, Sur. 363. S.D. 150 ft.
F. Davenport No. 1 Kelsey-Bass, 534 ft. S line, N 585-ac. tr., 2,856 ft. E line, Porc. 87. Set 1,000 ft. of surf. csg.; no report.
Davenport-Slick-Urschel No. 1 Slick Est., Davenport ranch, sec. 485. Drlg. 4,521 ft.
R. A. Mitchell No. 2 Bass, Sur. 8, Porcs. 76-77. Drlg. sh. 4,827 ft.
Moss & Heard No. 1 Ricaley, 1,500 ft. N of Highway No. 4, Porc. 83. R.U.
South Coast Oil Co. No. 1 Isabel Lopez, Sh. 40-B, Porc. 80. Drlg. 3,230 ft.
Sun Oil Co. No. 1 Orr, 330 ft. N and W lines, Porc. 103. Set csg. 94 ft.; drlg. 126 ft.

Webb County

B. M. Alexander No. 1 fee, Porc. 25. Loc.
American Texas Oil Co. No. 1 McKendricks, Porc. 46. R.U.
French Oil Corp. No. 1 Garcia, Sur. 1131. Drlg. 1,117 ft.

Ivan Howard No. 3 First Nat. Bank, Sur. 475. Drlg. 1,557 ft.

Lu-Tex Oil Co. No. 1-A Lone Star Const Co., Blk. 26, Porcs. 12, 13 and 14. Spdd.

Mid-Continent Pet. Corp. and Oklahom. Co. of Texas No. 1 Laubscher, 330 ft NE and NW lines, NW¼, sec. 1,394 Drlg. 3,251 ft.

Rowan & Hope No. 2 Neal, Blk. 2, Sur. 857. R.U.

Superior Oil Co. No. 1 Masterson, 330 ft. S and W lines, Sur. 35. R.U.

Wilcox O. & G. Co. No. 1 Puig, Serna Blanca Pasture, Galan Gr., Sur. 2183 Spudded.

Zapata County

Allison et al No. 1 Bustamante, Sh. 10 Comitas Gr. R.U.

Gilcrease Oil Co. No. 1 Trevino, 330 ft. NW and NE lines, Blk. 5, sec. 3, Mode Subd. Drlg. 3,083 ft.

Jennings No. 1 Martinez, Sur. 434. T.D 150 ft.; S.D.

Zavalla County

Wilcox O. & G. Co. No. 1 Gillman, sec. 11. R.U.

S. W. TEXAS PROVEN

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 1-C McCampbell, Lot 9, Blk. 41. Drlg. 1,326 ft.

J. Nelson No. 1 Riggs, 330 ft. NW line 213 ft. SW line, 6.46-ac. tr., Trs. 12 and 13, Blk. 16. Loc.

Hilbig—Bastrop County

Joe E. Mills No. 1 Askew, 600 ft. NW line, 1,525 ft. SW line, 278.5-ac. tr., Wolfenberger Sur. S.D. 2,907 ft.

Cosden—Bee County

Elwood & Young No. 3 Barnett, John Place Sur. Sd. 3,636-53 ft.; S.O.; P.B. 3,960 ft.; T.D. 4,050 ft.; S.D.; W.O.O.

Foley—Bee County

Miller & Donzis No. 1-B Holzmark, 1,802 ft. SW line, 1,245 ft. SE line, S. May Sur. Drlg. 3,635 ft.

Plummer—Bee County

W. C. McBride, Inc., No. 1 Plummer, sec 33, Chesman Sur. Set csg. 3,042 ft.; drlg. plugs.

Ray—Bee County

J. A. West No. 1-B Geo. Ray, W. B. Blanchard Sur. Drlg. 2,823 ft.

Voss—Bee County

Home Oil Co. No. 1 Massey, 1,650 ft. SW line, 330 ft. SE line, 127-ac. tr., Pilkington Sur. Drlg. 3,517 ft.

West Tuleta—Bee County

Blanco Oil Co. and Buchanan No. 1 Ed Staus, C Blk. 11, J. Uranga Gr. Tstg. Fettus sd. 3,565 ft.

Alta Mesa—Brooks County

California Co. No. 1 Jones, La Mestina de Gonzalina Gr. D.S.T. 1,707-16 ft.; showed gas with strong sulfur odor; drlg. 2,-728 ft.

Alta Verde—Brooks County

L. & W. Oil Co. No. 1 Wm. Singer, Blk 8, Sur. 436. S.D. 185 ft.; (cor.).

Nordan & Morris No. 4 Singer, Sur. [illegible] T.D. 891 ft.; tested oil and S.W.; prep. D.D.

Dick Young No. 5 Singer, Blk. 12, Su 312. T.D. sh. 1,001 ft.; stdg.

Branyon—Caldwell County

Adams & Lyles No. 3 Ellison, D. Cooper Sur. Cg. 2,047 ft.

Lincoln Pet. Co. No. 3 Brown, D. Cooper Sur. Drlg. 2,041 ft.

Taylor Ref. Co. No. 2 Branyon, D. Cooper Sur. Drlg. 1,107 ft.

Whisenant & Trenchard No. 3 Brown, J. R. Miller Sur. T.D. 1,900 ft.; acidizing.

Whisenant & Trenchard No. 1 McGee, John Neil Sur. Drlg. 1,726 ft.

McCrory—Caldwell County

Whisenant & Trenchard No. 1 McGee, John Neil Sur. Drlg. 837 ft.

Charamousca—Duval County

N V. Duncan No. 1 Wordon-Drought, Sur. 151. Drlg. 1,516 ft.

Colmena—Duval County

Conservative Oil Co. No. 2 D.C.R.C.-Sentz, 133 ft. NE line, 1,200 ft. SE line, Blk. 12, sec. 51. S.D. 1,544 ft.

Driscoll—Duval County

Continental Oil Co. No. 13-A Sevier, Sur. 448. M.I.M.

El Mesquite—Duval County

Rogers & Rogers No. 3 Pena, El Mesquite Gr. R.U.

Government Wells—Duval County

Highland Oil Co. No. 2 Hester, Sur. 117. Loc.

L. & R. Oil Co. No. 3 Webb, 12-ac. tr., Sur. 41. Loc.

Magnolia Pet. Co. No. 4 Johnson, Sur. 44. R.U.

Parr Oil Co. No. 3 Glover, SE¼ sec. 44. Sd. 2,355-60 ft.; comp.; 40 B.P.D.

Hoffman—Duval County

Bridwell Oil Co. and Gorman-Yoakam Drlg. Co. No. 1 Hoffman, Sur. 117. Loc.

Bridwell Oil Co. No. 2 Robles, 330 ft. S line, 990 ft. W line, Sur. 68. Sd. 2,796-2,822 ft.; comp.; 115 B.P.D.

Bridwell Oil Co. No. 4-B Sutherland, 330 ft. S and E lines, sec. 112. Drlg. 2,154 ft.

McCandless & Cloyes No. 1 Sutherland, 330 ft. S line, 4,818 ft. E line, sec. 126. T.D. 2,941 ft.; D.&A.

Kohler—Duval County

Humble O. & R. Co. No. 2 Peters, 330 ft. N and W lines, Sur. 398. Drlg. 1,015 ft.

Sun Oil Co. No. 1 Peters, 330 ft. S and W lines, Sur. 161. Loc.

Loma Novia—Duval County

Bridwell Oil Co. No. 5-A Hubbard, NW¼, Sur. 71. Sd. 2,683-98 ft.; comp.; 49 B.P.D.

Eastern Texas Prod. Co. No. 5 Hubbard, Sur. 71. R.U.

Humble O. & R. Co. No. 16-B Hubbard, 320-ac. tr., Sur. 83. Swbg. 2,740 ft.

Humble O. & R. Co. No. 17-B Hubbard, 320-ac. tr., Sur. 83. R.U.

Humble O. & R. Co. No. 62-B Hubbard, Sur. 72. Comp.; 6 B.P.H. on ½-in. ck.; T.D. 2,776 ft.

Humble O. & R. Co. No. 15-C Welder, sec. 554. Comp.; 8 B.P.H. on ½-in. ck.; T.D. 2,858 ft.

Humble O. & R. Co. No. 16-C Welder, Sur. 554. Swbg.; T.D. sd. 2,716 ft.

Magnolia Pet. Co. No. 49 Hahl, Sur. 67. Sd. 2,713-28 ft.; tstg.

Magnolia Pet. Co. No. 5 Herbst, 330 ft. S and E lines, Sur. 67. Sd. 2,711-29 ft.; comp.; 116 B.P.D. on pmp.

Magnolia Pet. Co. No. 6 Herbst, Sur. 70. Drlg. 1,726 ft.

R. Ogden No. 1-G Ruiz, 330 ft. S and W lines, 80-ac. tr., sec. 41. Drk.

Rosan Oil Co. No. 4-A Hubbard, Sur. 71. M.I.M.

Rosan Oil Co. No. 6-A Hubbard, Sur. 71. Comp.; 12 B.P.H.; T.D. 2,812 ft.

Shell Pet. Corp. No. 9 B.C.C., Sur. 59. Sd. 2,557-77 ft.; comp.; 9.35 B.P.H.

Sun Oil Co. No. 1-B Hubbard, Sur. 82. Sd. 2,787-92 ft.; oil odor; set csg. 2,793 ft.; comp.; no gauge.

Wollett & Masten No. 1 Bishop, S½ Sur. 74. Drlg. 2,772 ft.

Lopez—Webb—Duval Counties

Cox & Hamon No. 19 Peters, Sur. 322. Sd. 2,209-21 ft.; comp.; 20 B.P.H.

Glen Harroun No. 1-A Lopez, Sur. 110. Set csg. 2,259 ft.; reblds. drk.

Magnolia Pet. Co. No. 25 Peal, Sur. 383. Sd. 2,101-16 ft.; comp.; 72.4 B.P.D.

Magnolia Pet. Co. No. 26 Peal, Sur. 383. Set csg. 2,190 ft.; T.D. 2,190 ft.; comp.; 106 B.P.D.

Magnolia Pet. Co. No. 27 Peal, Sur. 383. M.I.M.

Magnolia Pet. Co. No. 28 Peal, Sur. 383. M.I.M.

Mortimer & Springer No. 2 Montemayor, Sur. 114. Drlg. 563 ft.

Mortimer & Springer No. 9-B Peal, Sur. 794. Set csg. 2,182 ft.; W.O.C.

Sierra Oil & Roy. Co. No. 1-B Billings, Sur. 113. Cg. 2,057 ft.

Peters—Duval County

Mills Bennett Prod. Co. No. 6 Peters, Sur. 178. Drlg. 1,831 ft.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 3 D.C.R.C., Sur. 97. Drlg. 2,124 ft.

Seven Sisters—Duval County

Humble O. & R. Co. No. 12 Badgley, Sur. 567. Sd. 2,498 ft.; comp.; 16 B.P.H. on ½-in. ck.

Humble O. & R. Co. No. 14 Badgley, Sur. 307. Rng. tbg. 2,524 ft.

Humble O. & R. Co. No. 35 Smith, Sur. 382. Set csg. 2,469 ft.; W.O.C.

Reliance Oil & Roy. Co. No. 17 Drummond, sec. 308. Sd. 2,467-88 ft.; comp.; 43 B. P.H. on ½-in. ck.

Reliance Oil & Roy. Co. No. 18 Drummond, 240-ac. tr., Sur. 308. Sd. 2,463-82 ft.; set csg.; drlg. plugs.

Texas Co. No. 4 Badgley, Sur. 307. Drlg. 1,956 ft.

Wellington Oil Co. No. 20 Welder, Sur. 382. Drlg. plugs; set csg. on sd. 2,449 ft.

Wellington Oil Co. No. 24-A Welder, Sur. 383. Sd. 2,447-57 ft.; comp.; 17.42 B.P.H. on ½-in. ck.

Westheimer & Daube No. 24 Campos, Sur. 224. R.U.

Pearsall—Frio County

Amerada Pet. Corp. (Davis) No. 1 Halff & Oppenheimer, 329-ac. tr., J. C. Clare Sur. 336½ (W.O.). Flwd. 130 B.P.D. then bridged; swbg. some oil.

Amerada Pet. Corp. No. 8 Halff & Oppenheimer, S. A. Ditch Sur. 1,104. Drlg. 1,817 ft.

Amerada Pet. Corp. No. 7 Oppenheimer, 1,-320 ft. W line, 330 ft. S line, Gibson Sur. 16. (W.O.); drlg. 5,317 ft.

Maetz—Goliad County

Felmont Oil Corp. No. 1 Hoff, B.S.&F. Sur. No. 7. Drlg. 2,936 ft.

North Pettus—Goliad-Karnes Counties

Magnolia Pet. Co. No. 6 Welden, J. Gomez Sur. T.D. 4,050 ft.; P.B. 3,700 ft.; W.O.C.

H. H. Weinert, Inc., No. 1 Porter, Victor Blanco Sur. Cg. 3,354 ft.

Clark-Guadalupe County

R. B. Byrd No. 1 Jahn, Dewitt Sur. Drlg. 2,516 ft.; no shows.

Diamond Halff Oil Co. No. 2 Larison, G. DeWitt Sur. M.I.M.

V. G. Schimmel No. 1 Grimm, Green Demitt Sur. Set csg. 2,342 ft.; T.D. 2,384 ft.; comp.; no gauge.

Mercedes—Hidalgo County

Union Sulphur Co. No. 10 American Rio Grande L. & L. Co., Blk. 50, Tr. 2.418, N. Caprisallo Dist. T.D. 8,306 ft.; washing down over tbg. 7,950 ft.

Mestanos—Hidalgo County

McCollum Explin. Co. No. 1-B Engleman Lot 8, sec. 249. Set 11¾-in. csg., 250 ft.; W.O.C.

McCollum Explin. Co. No. 1 MacDougall, Lot 232, sec. 249. Drlg. 2,716 ft.

Montana Pet. Co. No. 1 Harding, Lot 11, Blk. 94, Missouri-Kansas L. & I. Co., Subd. Mestanos Gr. Sd. 6,590-6,640 ft. odor oil and gas; taking core 7,820-40 ft.; blew out of control; burning; cratered; choking out.

Samfordyce—Hidalgo-Starr Counties

Harrison and Danvers No. 2-A Villalon, Tr. 262, Porc. 39. R.U.; S.D.

Harrison & Danvers No. 3 Guerra, 230 ft. N line, 730 ft. E line, Sh. 251, Porc. 38. Drk.

Skelly Oil Co. No. 1 F. B. Guerra, Tr. 251, Porc. 38. Sd. 2,800-09 ft.; comp.; 25 B.P.D. on 7/16-in. ck.

Colorado—Jim Hogg County

J. H. Meek No. 3-A Martinez, 1,650 ft. E line, 1,550 ft. N line, Sur. 623, M.I.M.

Sentonville—Jim Wells County

Camp Drlg. Co. No. 1-B Pope, 330 ft. S and E lines, 320-ac. tr., sec. 13. Sd. 5,-415-20 ft.; S.W.; drlg. 5,786 ft.

La Jita Corp. No. 2 Bowers, 330 ft. N line, 990 ft. E line, sec. 14. R.U.

La Jita Corp. No. 2 Pope, SE¼, sec. 20. Set csg. 5,585 ft.; D.&A.

Premont—Jim Wells County

Francis & Simonton No. 1 A. Lozana, Jr., 185 ft. E line, 165 ft. S line, Lot 111, sec. 36. Drlg. 2,316 ft.

Tom Graham and Gilcrease Oil Co. No. 1 Escobas, 330 ft. N and E lines, Blk. 4, sec. 25, Buffalo-Tex Subd., Escobas ranch. No report.

Tom Graham No. 1 Wm. Singer, C Lots 71 and 74, Sur. 76. Cd. oil sd. 3,163-67 ft.; tstg.

Sandia—Jim Wells County

J. E. Walsh No. 2 Wade, Lot 2, Blk. C, Bode Subd. Stdg. 2,040 ft.; (corrected).

Lucas—Live Oak County

Houston Oil Co. No. 3 Sellers, W. J. Cannon Sur. Cg. sh. 4,523 ft.

Oakville—Live Oak County

Ohio Fuel Oil Co. No. 1 Rosebrocks, Romero Sur. Drlg. 1,931 ft.

Calliham—McMullen County

Joe Coursey No. 3 Lark, Blk. 101, Scrugham Sur. Cg. 997 ft.

W. P. Howard No. 6 Claunch, M. Hely Sur. Cg. 427 ft.

Loma Oil Co. No. 47-A Jacob, sec. 10, Scrugham Sur. Set csg. 945 ft.; drlg. in.

Loma Oil Co. No. 11-F Jacob, Fadden Sur. Set csg. 943 ft.; drlg. in.

National Pet. Co. No. 2-B Lark, Jacob Sur. Drlg. 135 ft.

Rhodes—McMullen County

Humble O. & R. Co. No. 1 Edrington, 330 ft. S and W lines, sec. 57, A.B.&M. Sur. Sd. 3,052-64 ft.; tested S.W.; T.D. 3,100 ft.; rng. Schlumberger.

Ina—Medina County

Ina O. & R. Co. No. 3 Viola Wilson, Durst Sur. Drlg. 400 ft.

Agua Dulce—Nueces County

Stoddart & Moss No. 1 Colman, 330 ft. NW and NE lines, SE¼ SW 330-ac. tr., sec. 206. Drlg. 5,331 ft.

Texon Drlg. Co. No. 1 Clara Driscoll Sevier, 466 ft. S and W lines, 880-ac. tr., W. W. Chapman Lds. T.D. 6,832 ft.; blew out; caught fire and cratered; choked out.

[illegible] No. 2 W. W. Chapman Lot 5, Sh. 1, Chapman Lds. Subd. Set csg. 5,436 ft.; W.O.C.

Clara Driscoll—Nueces County

Blanco Oil Co. and Buchanan No. 1 W. S. Gandy, 330 ft. S and W lines, E½ sec. 60. M.I.M.

Conroe Drlg. Co. and H. M. Reed No. 1 Meyers, Lot 4, Blk. F, Driscoll townsite, sec. 107. Drk.

W. O. Hine No. 1 Sevier, 280 ft. S and E lines, W½, sec. 60. Sd. 5,710-30 ft.; set 5½-in. csg. 6,035 ft.; W.O.C.

Hiram Reed No. 2 Roper, C Lot 1, sec. 108. Perf. 3,901-05 ft.; gas and wtr.; to P.B. and perf. in 3,800-ft. sd.

Magnolia Pet. Co. No. 1 Clara Sevier, 330 ft. N and W lines, 240-ac. tr., R. Russell Sur. Drlg. 2,607 ft.

H. M. Reed No. 1 Holloway, 330 ft. S and E lines, 51.8-ac. tr., sec. 108. R.U.

Wellington Oil Co. No. 1-A Sevier, 125-ac. tr., Wm. Gamble Sur. Sd. 5,265-67 ft.; odor gasoline; cg. gas sd. 5,419 ft.

Wellington Oil Co. No. 5 Sevier, 990 ft. S line, 330 ft. E line, tr., Gambel Sur. Oil sd. 3,795-3,809 ft.; comp.; 12 B.P.H.

Wellington Oil Co. No. 7 Sevier, 2,310 ft. S line, 330 ft. E line, tr., Wm. Gambel Sur. R.U.

Flour Bluff—Nueces County

Humble O. & R. Co. et al No. 1 Cordz, C Lot 12, Blk. 48. Loc.

Humble O. & R. Co. No. 1 Jose Miller, C Lot 26, sec. 47. Tstg. 6,660 ft.

Humble O. & R. Co. No. 2 Phillips, C Lot 26, sec. 47. R.U.

Humble O. & R. Co. No. 1 Phillips, C Lot 2, Blk. 48. T.D. 6,663 ft.; comp.; 105 B.P.D. on 7/64-in. ck.

Humble O. & R. Co. No. 3 Phillips, C Lot 7, Blk. 48. M.I.R.

Humble O. & R. Co. et al No. 4 Phillips, C Lot 1, Blk. 55. Loc.

Humble O. & R. Co. No. 1 D. Reed, C Lot 28, Blk. 47. R.U.

Humble O. & R. Co. No. 1 Webb, C Lot 11, Blk. 47. Drlg. 6,647 ft.

Humble O. & R. Co. No. 1 Webster, C Lot 23, Blk. 48. Drlg. hd. sd. 6,623 ft.

S. Paul No. 1 Moulter, Blk. 16, sec. 41. Encinal Garden tracts. Loc.

Saxet Heights—Nueces County

Bartlett & Reed No. 2 Carson, 30-ac. tr. T.D. 4,126 ft.; comp.; no gauge.

Wm. Brady No. 1 Perkins, C Lot 49, Country Club Pl. T.D. 3,117 ft.; D.S. stuck.

Callihan Bros. and Whitley No. 1 Hartley, Villareal Sur. R.U.

J. K. Culton No. 9 Baldwin, Blk. 19, Russell Farm Lots. T.D. 4,084 ft.; comp.; 75 B.P.D. on 3/16-in. ck.

J. K. Culton No. 10 Baldwin, 660 ft. SW of No. 9, 330 ft. SE line, lse., Villareal Sur. Loc.

D. & S. Drlg. Co. No. 1 Meany, 53.41-ac. tr., Villareal Gr. Drlg. 2,177 ft.

Genro & Roosth No. 1 Caddell, C Lots 3, 4 and 5, Blk. "D," Harbor View Ests. Sd. 4,045-80 ft.; set csg. 4,080 ft.; W.O.C.

Tom Graham No. 2 Carver, 2.5-ac. tr., Ellendale Gardens. Sd. 4,060-4,110 ft.; perf. csg.

Chas. F. McGrew No. 3 Kelly, 19-ac. tr. Sd. 4,060-90 ft.; set csg.; W.O.C.

Morgan Bros. No. 2 Bender, Blk. C, Harbor View Estates. T.D. 4,085 ft.; failed to flow; S.D.

W. N. Paul No. 2 Schallert, cen. Blk. "C," Harbor View Addn. S.D. 1,800 ft.; W.O.

Pedernal Oil Co. No. 1 John, Blk. 14, Oak Park Addn. S.D. 4,110 ft.; orders

Port O. & G. Co. No. 2 Corpus Christi College, 39.6-ac. tr. Set csg. 4,090 ft.; drlg. plug.

Port O. & G. Co. No. 3 Cohen, Villareal Sur. R.U.

J. D. Proctor No. 1 Simonton, 100 ft. E line, 68 ft. N line, 1-ac. tr., Lots 46 and 47, Country Club Pl. Sd. 4,070½-83 ft.; set csg.; completing.

Renwar Oil Co. and Maryland Corp. No. 2 Guarantee Title & Trust Co., Lot 6, Blk. 9, Villa Gardens. R.U.

Renwar Oil Co. and Maryland Pet. Corp. No. 2 Meany, 150 ft. N Shell Rd., 280 ft. E line, 40-ac. tr. Sd. 4,052-77 ft.; comp.; no gauge.

Saxet O. & G. Co. No. 3 Edwards, 1,371 ft. SW line, 165 ft. NW line, 32-ac. tr. Sd. 4,077-4,118 ft.; tested S.W.; S.D.; W.O.O.

Sam Wilson No. 2 Glover Johns, Villareal Sur. Drlg. 4,047 ft.

Saxet—Nueces County

Allen & Morris No. 1 Hocker & Sevier, 330 ft. N Shell Rd., 330 ft. W line, 100-ac. tr. Cg. 4,787 ft.

C. Andrade No. 3 Franks, 330 ft. N and E lines lse., Sur. 500. Drlg. 5,012 ft.

C. Andrade No. 1 Morgan, 330 ft. N and E lines lse., Sur. 592. Drlg. 3,721 ft.

An-Tex Prod. Co. No. 2 Smith, 11.6-ac. tr., Sur. 315. T.D. 4,572 ft.; comp.; 176 B.P.D.

Paul Benedum No. 1 Harmon, 330 ft. S and E lines, 50-ac. tr., Sur. 416. Sd. 6,-320-36 ft.; oil odor.

Benson Drlg. Co. No. 1 R. Morgan, 330 ft. N and W lines, 80-ac. tr. Drlg. 4,317 ft.

R. B. Bryant No. 5 Scoggin, Sur. 315. Cg. 4,506 ft.

Conservative Oil Co. No. 2 Morgan-Clark, 330 ft. S and W lines, W½ NW¼ sec. 405. Sd. 4,074-94½ ft.; set csg.; W.O.C.

Conservative Oil Co. No. 2 R. Morgan, 109-ac. tr., Sur. 403. Cg. 5,809 ft.

Conservative Oil Co. No. 1-A Rand Morgan, 80-ac. tr., Sur. 315. Drlg. 3,367 ft.

L. Glasscock No. 2 Hunter, 159-ac. tr., Page Sur. Cg. sd. 5,850 ft.; show S.W.

Great States Oil Co. and Violet Oil Corp. No. 7 McGregor-Belk, Sur. 311. Drlg. 4,-237 ft.

Hiawatha Oil Co. No. 6 Griffith, 330 ft. S line, 3,084 ft. E line, Sur. 416. Sd. 6,303-18 ft.; fsg. 6,408 ft.

Hiawatha Oil Co. No. 6 Hutchins-Stillwell, Blk. 30, Sheppard Farm Lots. R.U.

Hiawatha Oil Co. No. 7 Hutchins-Stillwell, Blk. 30, Sheppard Farm Lots. R.U.

W. B. Hinton No. 5 Cole, 330 ft. N and W lines, 60-ac. tr., Villareal Sur. Sd. 4,-867-76 ft.; set csg.; stdg.

Houston Oil Co. No. 2-A fee, 23.6-ac. tr. T.D. 6,297 ft.; shut in; closed-in C.P. 2,350 lbs.

Houston Oil Co. No. 2 Isensee, Lot 2, Sur. 13. (W.O.); Old T.D. 4,869 ft.; plg. tbg.

Houston Oil Co. No. 10 McGregor, 135-ac. tr., Sur. 582. Cg. sh. 5,311 ft.

Houston Oil Co. No. 11 McGregor, 135-ac. tr., Sur. 582. Sd. 5,809½-19 ft.; set csg.; W.O.C.

Pan American Prod. Co. No. 3-A Morgan, 40-ac. tr. Set csg. 180 ft.; W.O.C.

Pan American Prod. Co. No. 4-C Morgan, 90-ac. tr., Sur. 403. Drlg. 4,921 ft.

Pan American Prod. Co. No. 3-A Sagarin, 32-ac. tr. Drlg. 4,372 ft.

Pan American Prod. Co. No. 3-B Sagarin, Sur. 500. Drlg. 1,710 ft.

Phillips Pet. Co. No. 5 Hutchins, 60-ac. tr., Blks. 29 and 30, Sheppard Farm Lots. Drlg. 4,243 ft.

Phillips Pet. Co. No. 4 Morgan, Sur. 405. Drlg. 4,481 ft.

Renwar Oil Co. and Andrade No. 7 McGregor-Belk, Sur. 311. Drlg. 3,670 ft.

Renwar Oil Co. and Maryland Oil Co. No. 4 Rand Morgan, 660 ft. E of No. 3, 330 ft. N line lse., Surs. 315 and 592. Sd. 4,-552-70 ft.; set csg.; perfg.

Republic Nat. Gas Co. No. 15 Dunn, Blks. 37 and 38, Sheppard Farm Lots. Drlg. 6,141 ft.

Republic Nat. Gas Co. No. 16 Dunn, Blk. 37, Sheppard Farm Lots. Drlg. 5,871 ft.

Republic Nat. Gas Co. No. 1 Ordner, 219-ac. tr., Sur. 403. Drlg. 4,967 ft.

Richardson Pet. Co. No. 3 Cain & Secrist, 890 ft. N line, 330 ft. W line, Blk. 23, Russell Farm Lots. Sd. 4,407-19 ft.; set csg. 4,407 ft.; comp.; no gauge.

Richardson Pet. Co. No. 4 Cain & Secrist, Blk. 23, Russell Farm Lots. Sd. 4,420-31 ft.; comp.; no gauge.

Richardson Pet. Co. No. 5 Cain & Secrist, Blk. 23, Russell Farm Lots. R.U.; W.O. wtr.

Richardson Pet. Co. No. 4 Quiros, Blk. 40, Sheppard Farm Lots, Drk.

Southern Minerals Corp. No. 1 Bernson, 330 ft. N and E lines, 120.45-ac. tr., Sur. 40, Sd. 4,080-98 ft.; rng. screen and lnr.

Southern Minerals Corp. No. 19 Bliss, 398 ft. N line, 446 ft. W line, N 120-ac. tr., Sur. 406. Drlg. 3,683 ft.

Southern Minerals Corp. No. 7 Isensee, Sur 404. Set csg. 911 ft.; sd. 4,405-25 ft.; reworking.

Southern Minerals Corp. No. 8 Ocker, 330 ft. N and E lines, 202-ac. tr., Page Lands Sur. T.D. 4,868 ft.; comp.; 120 B.P.D. on ¼-in. ck.

Southern Minerals Corp. No. 8 Smith, Blk 1, Sheppard Farm Lots, Cg. sd. 4,429 ft.

Southern Minerals Corp. No. 1 Till, 990 ft. S line, midway E and W lines, 52.6-a tr., Page Lds. Sur. T.D. 6,605 ft.; perf csg. 4,862-69 ft.; rng. screen and lnr.

T. & T. Oil Co. No. 3 Cain & Secrist, Blk 23, Russell Farm Lots, Sd. 4,442-48 ft set csg.; comp.; 180 B.P.D. on 3/16-in. ck.

Texon Drlg. Co. No. 4 Carter, 219-ac. tr., Sur. 316. Drlg. 4,017 ft.

Texon Drilling Co. No. 2 Isensee, 150 ft N line, 112 ft. W line, 13.44-ac. tr., Land Sur. 404. Set csg. 4,440 ft.; W.O.C.

Texon Drlg. Co. No. 5 McElroy, 40-ac. tr., Gallagher Sur. Sd. 4,420-47 ft.; comp.; no gauge.

Texon Drlg. Co. No. 5 Scoggin, 144-ac. tr., Sur. 315. Drlg. 3,817 ft.

W.A.R. Oil Co. No. 4 Buckholt, 330 ft. N and E lines, 258.9-ac. tr., Sur. 316. Set surf. csg.; W.O. wtr.

W.A.R. Oil Co. No. 1 Hutchins, Sur. 416. (W.O.); old T.D. 4,200 ft.; cg. 6,413 ft.

Wynne Drlg. Co. No. 3-A R. Morgan, 80-ac. tr., Sur. 315. Drlg. 4,032 ft.

Wynne Drlg. Co. No. 3-B Morgan, 330 ft. S and W lines, 80-ac. tr., Surs. 315 and 592. M.I.M.

Plymouth—San Patricio County

Heep Oil Corp. No. 6-F Welder, 646.56-ac. tr., sec. 46. Drlg. 187 ft.

Humble O. & R. Co. No. 4 Bevly, Blk. 1, sec. 35. Drlg. sh. 3,925 ft.

Magnolia Pet. Co. No. 11 Corpus Christi Bank, sec. 24, Fourth Addn., Taft Lds Drk.

Plymouth Oil Co. No. 61-C Welder, sec. 49. Comp.; 191 B.P.D.; T.D. 4,988 ft.; P.B. 4,469 ft.

Plymouth Oil Co. No. 64-C Welder, sec. 71. Drlg. 4,596 ft.

Sun Oil Co. No. 8 Hunt, Blks. 5 and 6, sec. 34. Oil sd. 5,627-37 ft.; set csg. 5,-637 ft.; drlg. plugs.

Taft Field—San Patricio County

Atlantic Ref. Co. No. 2 Pullin, Lot 4, sec. 1, Second Addn., Taft Farm Lds. Sd. 4,915½-31½ ft.; comp.; 17 B.P.H. on ¼-in. ck.

Atlantic Ref. Co. No. 3 Pullin, 330 ft. N line, 380 ft. W line, 40-ac. tr., Lot 4, sec. 1, Second Addn. R.U.

Humble O. & R. Co. No. 7 Mayo, 150 ft S and E lines, 640-ac. tr., Ottman Sur Drk.

Humble O. & R. Co. No. 10 Mayo, Wm Burns Sur. T.D. 4,375 ft.; tstg.

White Point—San Patricio County

Earl Calloway No. 1 White Point Dev. Co., 330 ft. E line, midway N and S lines, G Seguin Sur. No. 5. T.D. 6,512 ft.; P B to 3,700 ft.; cd. sd. 4,900-14 ft.; D.&A.

Cuevitas—Starr County

Barbara Oil Co. No. 1 Pardue, Javail Gr. D.&A. 2,660 ft.

Los Olmus—Starr County

Ted Stone No. 1 Kelsey-Bass, Porc. 87, J. of Camargo. Sd. 400-08 ft.; tstg.

Margo—Starr County

Braden & Richards No. 1 L. Garcia, C 20-ac. tr., Sh. 7-B, Porc. 71. Oil sd. 394-96 ft.; S.O.; S.D.

Rio Grande City—Starr County

Sam Adams No. 1 Garza, Sh. 20-A, Porc. 80. S.D. 524 ft.

Coretz Oil Co. No. 5 Doyno, Blk. 1, Tr 77-A, Porc. 81. Spudded; S.D.

Fech Oil Co. No. 12 Doyno, Blk. 4, Tr. 77-A, Porc. 81. Spudded; W.O.O.

Carolina-Texas—Webb County

E. J. Sawyer No. 2 Webster, 330 ft. S line, 1,980 ft. W line, Sur. 684. Fag. 3,-050 ft.

Cole—Webb County

L. H. Sexton No. 1 R. Benavides, Blk. 4 Sur. 22, Cole Subd. No report.

Las Albercas—Webb County

Frank Garvis No. 12 Yeager-Strohman, Sh. 5, Las Animas Gr. Spudded.

O'Hern—Webb County

Hamil & Smith No. 14 Benavides, Blk. 312, Hale Subd. Drlg. 107 ft.

Hamil & Smith No. 15 Benavides, O'Hern Subd. Drlg. 277 ft.

Magnolia Pet. Co. No. 16 S. Benavides, Blk. 14, O'Hern & Seacord Subd. T.D. 2,843 ft.; comp.; 5 B.P.H.

Magnolia Pet. Co. No. 17 S. Benavides, O'Hern & Seacord Subd. Drlg. 179 ft.

H. J. Porter No. 7 Benavides, Hale Subd. Comp.; 17 B.P.H. on ½-in. ck.; T.D. 2,912 ft.

H. J. Porter No. 8 Benavides, Blk. 315, Hale Subd. Drlg. 162 ft.

H. M. Reed No. 4 Benavides, Blk. 299, Hale Subd. R.U.

Starr Dev. Co. No. 1 Benavides, 330 ft. N and W lines, Sur. 173. M.I.M.

Cuellar—Zapata County

Nordan & Morris No. 2 Cuellar, Cerrito Blanco Gr. Drlg. 520 ft.

Escobas—Zapata County

Sam Evans No. 1 Garza, Blk. 19, Zorro ranch. R.U.

H. & R. Oil Co. No. 4 Garza, Blk. 11. Comp.; 60 B.P.D. on pmp.; T.D. 1,235 ft.

H. & R. Oil Co. No. 5 Garza, 185 ft. SW line, 584 ft. NW line, Blk. 11, Douglas Subd. Set csg. on sd. 1,240 ft.; W.O.C.

Glen Harroun No. 1 Garza, Blk. 10, Douglas Subd. Comp.; 120 B.P.D.; T.D. 1,-276 ft.

Glen Harroun No. 3 Garza, Blk. 10, Douglas Subd. R.U.

O. W. Killam No. 9 Medina, Sh. 34, Fansler Part. Loc.

Frank Schneider No. 5 Garza, Blk. 21, Douglas Subd. Cg. 1,115 ft.

[illegible] 250 ft. S No. 7, Cerrito Blanco Gr. Drlg. sd. 2,356 ft.

Haynes—Zapata County

Gilcrease Oil Co. No. 16-B Haynes, Blk. 4, Haynes Subd. Sd. 1,003-13 ft.; comp.; 5 B.P.D.

Gilcrease Oil Co. No. 16-C Haynes, Blk. 8, Haynes Subd. D.&A. 949 ft.

J. D. Long No. 1 Phelps, Villa Gr. R.U.

Magnolia Pet. Co. No. 1 Haynes, Blk. 7, Haynes Subd. Comp.; 50 B.P.D.; sd. 1,-035-39 ft.

Magnolia Pet. Co. No. 2 Haynes, Blk. 7, Haynes Subd. M.I.M.

McKay & Upchurch No. 15 Haynes, Blk. 7, Haynes Subd. Cg. 913 ft.

United Prod. Co. No. 5 Haynes, Blk. 13, Haynes Subd. T.D. 988 ft.; comp.; 35 B. P.D.

United Prod. Co. No. 6 Haynes, Blk. 13. T.D. 1,028 ft.; comp.; 30 B.P.D.

United Prod. Co. No. 7 Haynes, Blk. 13, Gunby Subd. Tstg. 982 ft.

United Prod. Co. No. 8 Haynes, Blk. 13, Gunby Subd. Rng. tbg. 1,049 ft.

United Prod. Co. No. 9 Haynes, Blk. 13, Gunby Subd. Rng. tbg. 960 ft.

E. C. TEXAS WILDCATS

Angelina County

Hicks et al No. 10-B Morris, J. Morris Sur., 3 mi. E of Diboll. Drlg. 982 ft.

W. A. Stone et al No. 1 Southern Pine Lbr. Co., B. J. Thompson Sur., 8 mi. SE Lufkin. Drk.

Cherokee County

General Crude Oil Co. No. 1 L. S. Stockton, S. Jarboe Sur., 6 mi. NE of Jacksonville. Pecan Gap 3,330-3,695 ft.; drlg. 4,-251 ft.

A. F. Richardson No. 1 F. P. O'Brien, G. S. Clapp Sur., 3 mi. NW of Rusk; 5,000-ft. test. Loc.

Falls County

R. M. Hefflin No. 1 T. E. Battle, Marl Sur., 3 mi. SW of Marlin. S.D. 2,082 ft.

Thirteen Oil Co No. 1 H. R. Roberts, N Slatter Sur., 6 mi. SE of Lott. Pecan Gap 1,480 ft.; S.D. 1,560 ft.

Fannin County

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. S.D. 1,286 ft.

Styles & Smith No. 1 R. Stewman, J. W. Clark Sur., 2 mi. SE of Trenton. S.D.

Freestone County

Wheelock & Collins No. 1 W. R. Boyd, 867 ft. N and 1,600 ft. W line of 409-ac. tr., F. B. Cabler Sur., 4 mi. SW of Fairfield. Loc.

Yancey et al No. 1 Scott, Church Lot H. Awalt Sur., W of Stewartsville. Fag. 3,-860 ft.

Henderson County

Cosden Oil Co. No. 1 Miller, Top Woodbine 4,898 ft.; S.D. 4,936 ft.

McDougal et al No. 1 E. Price, M. Mathews Sur., 4 mi. S of Trinidad. Drlg. 4,122 ft

Hunt County

Penn Oil Corp. et al No. 1 A. B. Manning, 5 mi. NE of Lone Oak, S. Owens Sur. Drk.

Lamar County

Lowery-Cutler No. 1 E. C. Porter, Thos King Sur. Drk.

Leon County

J. B. Daniels et al No. 1 Carter. S.D. 200 ft.

Roth & Faurot No. 1 J. L. Shaw, O. R. Reams Sur., 5 mi. N of Centerville. Drlg. 5,071 ft.

Limestone County

A. W. Phillips et al No. 1 E. M. Speight, M. Herrin Sur., 6½ mi. SE of Mexia. R.U.

Nacogdoches County

L. C. Bonhan et al No. 1 Angelina Lbr. Co., in J. Gomez Sur., 14 mi. SE of Nacogdoches. Drlg. 5,815 ft.

Collier et al No. 1 [illegible] T. J. Lambert Sur. Drlg. 4,812 ft.

Rains County

Humble and Tide Water Oil Co. No. 1 Easter, R. Hotchiss Sur., 5 mi. NW Alba. Top Woodbine 4,257 ft.; top Georgetown 5,003 ft.; drlg. 5,070 ft.

Red River County

Abercrombie and Harrison No. 3 Southern Pine Lbr. Co., D. D. Bruton Sur., 10 mi. NE of Clarksville, Drlg. 1,962 ft.

Carpenter Oil Co. No. 1 R. E. Anderson S. W. Sims Sur., 3 mi. N of Clarksville. Drlg. 1,580 ft.

Roy I. Carter Drlg. Co. No. 1 J. A. Tutt, C 40-ac. tr. in D. Hart Sur., 2 mi. S of Avery. S.D. 80 ft.

M. Petroff et al No. 1 R. G. Morris, J. Guest Sur., 2 mi. W of Detroit. S.D. 20 ft.

Robertson County

J. E. Mills No. 1 T. Congelosi, C of 75-ac tr. in G. A. Nixon Sur., 3½ mi. SW of Hearne. Drlg. 2,255 ft.

Rusk County

John W. Merritt No. 1 J. A. Stallings, T Uzzell Sur. 2½ mi. S of East Texas field, S.D. 3,926 ft.

Ben C. Lamb No. 1 Leath, L. J. Dooley Sur., 2½ mi. E of Pirtle; old test deepening; C.O. 4,740 ft.

Smith County

W. L. Cloud No. 1 Kendall. S.D. 2,794 ft.

Upshur County

R. L. Watson No. 1 W. O. Irwin, D. Cannon Sur., NE cor. of county. Pecan Gap 2,345 ft.; drlg. 3,770 ft.

Wood County

G. W. Nix et al No. 1 E. A. Russell, J Delap Sur., SW cor. of county. S.D. 600 ft.

EAST TEXAS

(Border Counties)

Bowie County

Woodley & Bentley No. 1 Lumpkin, J. McDermott Sur., 1 mi. SW Dalby Spgs. Drlg. 4,260 ft.

Cass County

American Lib. No. A-3 Baugus, J. H. Rives Sur., Lot 12. 5-in. cmt. 6,016 ft.; T.D. 6,029 ft.; W.O.C.S.

American Liberty No. 5-A Baugus, J. H. Kives Sur., Lot 10. T.D. 1,940 ft.

American Liberty No. 2-B Baugus, Lot 14, J. H. Rives Sur. Drlg. 5,420 ft.

American Liberty No. 2 Shepard, Lot 11, J. H. Rives Sur. Drlg. 3,062 ft.

American Liberty No. 2 J. Wiley, SE cor. 58.86-ac. tr., J. Davenport Sur. Cg. 5,-985 ft.

American Liberty No. 3 J. Wiley, 56-ac. tr., J. Davenport Sur. 5-in. cmt. 5,981 ft.; W.O.C.S.

American Liberty No. 4 J. Wiley, C E and W line, 56-ac. tr., J. Davenport Sur. Loc.

Bay Oil Co. No. 1 G. E. Parker, SE cor. Greenham Sur. Swbg. and tstg.; T.D. 6,050 ft.

Eastern Tex. Prod. Co. No. 1 Belote, H. Holbert Sur. Drlg. 5,100 ft.

Gulf Prod. Co. No. 2 Dawson et al. NW cor. lse., J. H. Rives Sur. Drlg. 3,872 ft.

Herman L. Brown No. 2 R. P. Willis, on 81½-acre trk. in Robert Trammel Sur Comp.; flw. 360 bbls. in 24 hrs.; ¼-in. ck.; T.D. 6,010 ft.

P. L. Hoffman et al No.1 Davis, James Smith Sur., SE cor. 58-ac. tr. R.U.

H. L. Hunt No. 1 I.N.&C.L. Shelton, SE cor. 202-ac. tr., J. Davenport Sur. Tstg.; T.D. 6,030 ft.

W. F. Lacey No. 1 J. Lewis, NW cor. B. E. Echols 17.4-ac. lse., H. Holbert Sur. Drlg. 3,322 ft.

Magnolia Pet. Co. No. 12 J. E. George Est., John Collum Sur., NW cor. George tr. Drlg. 5,050 ft.

Magnolia Pet. Co. No. 14 J. E. George Est., NW cor. George tr., John Collum Sur. Drlg. 5,550 ft.

Magnolia No. 1 Meda Green, SW cor. J. Davenport Sur. Drlg. 5,290 ft.

Magnolia Pet. No. 3 Meda Green, James Davenport Sur., SE cor. 73-ac. lse. Drlg. 4,890 ft.

Magnolia No. 4 Meda Green, on Jesse Baugus 60-ac. tr., J. Davenport Sur. Drlg. 5,990 ft.

Magnolia No. 5 Meda Green, James Davenport Sur., 245-ac. lse. Drlg. 3,022 ft.

Magnolia No. 2 Noel Est., Wm. B. Hughes Sur., NE cor. Noel lse. Drlg. 2,100 ft.

Magnolia Pet. Co. No. 5 Rives, SE cor. John Collum Sur. Rng. tbg.; T.D. 6,-035 ft.

Magnolia No. 7 Rives, NE cor. John Collum Sur. Comp.; flw. 405 bbls. in 24 hrs.; T.D. 6,040 ft.

Magnolia No. 8 Rives, NE cor. John Collum Sur. T.D. 6,067 ft.; tstg.

Magnolia No. 9 Rives, NE cor. John Collum Sur. Comp.; flw. 8 B.P.H.; 3/16-in. ck.; T.D. 5,990 ft.

Magnolia No. 10 Rives, NE cor. John Collum Sur. Drlg. 4,047 ft.

Magnolia No. 11 Rives, John Collum Sur., 504 ft. SE of No. 6. Drlg. 3,550 ft.

Magnolia No. 1 Thornton Hrs., Wilson Robinson Sur., NE cor. 30-ac. tr. R.U.

Magnolia No. 1 Wall & McLeod, NE cor. 82-ac. lse., Alex Archer Sur. Drlg. 5,-110 ft.

Magnolia No. 2 Wall & McLeod, NW cor. 82-ac. lse., Alex Archer Sur. Drlg. 5,-077 ft.

Magnolia No. 3 Wall & McLeod, SE cor. 82-ac. lse., Alex Archer Sur. Drlg. 4,-900 ft.

Magnolia No. 4 Wall & McLeod, SW cor. 82-ac. lse., Alex Archer Sur. Drlg. 3,-815 ft.

R. W. Norton No. 3 J. T. Moore, Wm. R. Myers Sur., 210-ac. tr. Drlg. 5,500 ft.

Ohio Oil Co. No. 4 R. P. Willis, S.F.I.W. Sur. Comp.; flw. 426 bbls. in 24 hrs.; T.D. 5,963 ft.

Ohio Oil Co. No. 5 R. P. Willis, S.F.I.W. No. 1263. Drlg. 1,000 ft.

Ohio Oil Co. No. 7 R. P. Willis, S.F.I.W. No. 1,263 Sur. Loc.

Ohio Oil Co. No. 9 R. P. Willis, S.F.I.W. Sur. No. 1,263, SW of No. 3. Drlg. 800 ft.

Ohio Oil Co. No. 10 R. P. Willis, 933 ft. S of No. 4, S.F.I.W. Sur. No. 1,263. Drlg. 4,800 ft.

Ohio Oil Co. No. 12 R. P. Willis, SE cor. 320-ac. tr., S.F.I.W. Sur. 1,263. Drlg. 2,930 ft.

Phillips Pet. Co. No. 1 Chew, SE cor. 207-ac. lse., Robt. Trammel Sur. R.U.

Phillips Pet. Co. No. 2 Chew, 1,460 ft. N, 326 ft. W, SE cor. W. D. Chew 207-ac. lse., Robt. Trammel Sur. Drlg. 3,500 ft.

Phillips Pet. Co. No. 3 Chew, 2,324 ft. N, 326 ft. W, SE cor. W. D. Chew 207-ac. lse., Robt. Trammel Sur. Drlg. 5,055 ft.

Phillips Pet. Co. No. 2 Farrier, on 200-ac. tr., Wm. Myers Sur. Drlg. 4,200 ft.

Phillips No. 3 Farrier, Wm. R. Myers Sur., 220-ac. lse. Loc.

Phillips No. 4 Farrier, Wm. R. Myers Sur., 933 ft. W of No. 2. R.U.

Phillips Pet. Co. No. 1 G. E. George, Wm. R. Myers Sur. 7-in. cmt. 6,035 ft.; T.D. 6,050 ft.; W.O.C.S.

Phillips Pet. Co. No. 1 Skinner, Hutchinson tr., S.F.I.W. Sur. No. 1,025. Loc.

Phillips Pet. Co. No. 2 Skinner, Hutchinson tr., S.F.I.W. Sur. No. 1,025. Drlg. 2,440 ft.

Phillips Pet. Co. No. 3 Skinner, 160-ac. tr. in S.F.I.W. Sur. No. 1,025. Drlg. 5,-511 ft.

Phillips Pet. Co. No. 3 Wartzbaugh, 431 ft. N and midway between E and W line of lse., Robt. Trammel Sur. Comp.; flw. 363 bbls. in 24 hrs.; ¼-in. tbg. ck.; T.D. 6,150 ft.

Phillips Pet. Co. No. 1 M. Wasson, W. R. Myers Sur., 27-ac. tr. Drlg. 5,640 ft.

Showers & Moncrief No. 6 T. D. and Sallie Stalcup, Robt. Trammel Sur., 330 ft S and 1,338 ft. W line, Loc.

Showers & Moncrief No. 8 T. D. and Sallie Stalcup, Robt. Trammel Sur., midway between E and W line of lse. Loc.

Spray Oil Co. No. 1 Scott, 25-ac. lse., midway N and S, Robt. Trammel Sur. Drlg. 5,156 ft.

Spray Oil Co. No. 2 Scott Adams, 25-ac. tr., Robt. Trammel Sur. Loc.

Superior Oil No. 5-A Chew, W.D.&C.C. Tract, Robt. Trammel Sur. 7-in. cmt. 5,963 ft.; T.D. 5,985 ft.; W.O.C.S.

Texas Co. No. 2 W. M. Hall, Alex Archer Sur., 664 ft. W of E line. Drlg. 3,400 ft.

Texas Co. No. 1 J. B. McLeod, W. A. Elliott Sur., 1,416 ft. W of E and 466 ft. S of N 160-ac. tr. 5-in. cmt. 6,114 ft.; T.D. 6,114 ft.; W.O.C.S.

Texas Co. No. 2 J. B. McLeod, W. A. Elliott Sur., 440 ft. E of W and 495 ft. S of N line of 160-ac. tr. Drlg. 2,300 ft.

Texas Co. No. 1 N. A. Rambo, C. C. Sch. Ld. Sur., SW cor. 160-ac. lse. Drlg. 1,-827 ft.

Tide Water No. 1 W. D. Chew, Robt Trammel Sur., 150 ft. N of S line, midway between E and W lines of 20-ac. lease. Derrick.

Tide Water No. 2 C. C. Chew, on 55-ac. tr., Robt. Trammel Sur. Drlg. 5,307 ft.

Tide Water No. 3 C. C. Chew, NW cor. 55-ac. tr., Robt. Trammel Sur. Drlg. 2,000 ft.

United Prod. Co. No. 2 Bewley, 467 ft. N and W of So. SW cor. George 200-acre tr. Comp.; flw. 30 B.P.H.; ½-in. ck.; T.D. 5,980 ft.

United Prod. Co. No. 2 G. W. Bibby Unit, Alex Archer Sur., Hartzo 20-ac. lse. Loc.

United Prod. Co. No. 3 G. W. Bibby Unit, Alex Archer Sur., 13-ac. Hartzo lse. Loc.

United Prod. Co. No. 4 G. W. Bibby Unit, Alex Archer Sur., 24-ac. tr. Loc.

United Prod. Co No. 6 J. R. Jones Unit, SE cor. Ben J. Murray Sur. Cg. 5,970 ft.

United Prod. Co. No. 7 J. R. Jones Unit, SE cor. Ben J. Murray Sur. Drlg. 5,-506 ft.

United Prod. Co. No. 8 J. R. Jones Unit, SE cor. Ben J. Murray Sur. Cg. 5,982 ft.

United Prod. Co. No. 9 J. R. Jones Unit, Ben J. Murray Sur. Loc.

United Prod. Co. No. 10 J. R. Jones Unit, Ben J. Murray Sur. Loc.

United Prod. Co. No. 1 Rambo Unit, Robt. Trammel Sur., 330 ft. N and W SE cor., Maden Rambo 40-ac. tr. 7-in. cmt. 5,995 ft.; T.D. 6,020 ft.; W.O.C.S.

United Prod. Co. No. 2 Rambo Unit, 330 ft. S 385 ft. W NE cor. Maden Rambo 25-ac. tr., Robt. Trammel Sur. Comp.; flw. 30 B.P.H.; ½-in. ck.; T.D. 6,010 ft.

United Prod. No. 3 Rambo Unit, 385 ft. W of westerly SW cor. of Stalcup trk., Robt. Trammel Sur. Comp.; flw. 30 B. P.H.; ½-in. ck.; T.D. 6,011 ft.

United Prod. No. 5 Rambo Unit, Robt. Trammel Sur., 150 ft. N and 311 ft. W of SE cor. H. A. Trammel 183-ac. trk Comp.; flw. 32 B.P.H.; ½-in. ck.; T.D. 6,035 ft.

United Prod. No. 6 Rambo Unit, Robt. Trammel Sur., 150 N. 814 W SE cor H. A. Thomas 83-ac. tr. 7-in. cmt. 5,974 ft.; T.D. 6,010 ft.

United Prod. Co. No. 7 Rambo Unit, Jas. Davenport Sur., H. A. Thomas 83-ac. tr. Drlg. 3,130 ft.

United Prod. Co. No. 8 Rambo Unit, Jas. Davenport Sur., H. A. Thomas 83-ac. tr. Drlg. 2,000 ft.

United Prod. No. 8 J. T. Stewart Unit, John Collum Sur. of 81.9-ac. tr. 7-in. cmt. 6,016 ft.; T.D. 6,042 ft.

United Prod. Co. No. 9 J. T. Stewart Unit, John Collom Sur., 81-ac. tr. Loc.

United Prod. Co. No. 10 J. T. Stewart Unit, John Collom Sur., 48-ac. tr. Loc.

United Prod. No. 3-A J. T. Wall, Alex Sur., on J. T. and J. D. Wall 82-ac. trk Comp.; flw. 48 B.P.H.; ½-in. ck.; T.D. 6,085 ft.

United Prod. No. 4-A J. T. Wall, Alex Sur., on J. T. and J. D. Wall 82-ac. trk. Drlg. 5,975 ft.

United Prod. Co. No. 3 Tyson Unit, J. H. Rives Sur. Cg. 6,025 ft.

Harrison County

Geyer Oil Co. No. 1 Alex Moore, 5 mi. SW of Waskom, C. W. Fields Sur. 10-in. cmt. 45 ft.; drlg. 360 ft.

Geyer Oil Co. No. 2-A Vincent, S. B. Harrison Sur. T.D. 2,452 ft.; tstg.; est. 31 B.P.D. on pmp.

Hanover, Bergendoll et al No. 1 Buchanan, Wm. McIlvain Sur. T.D. 4,220 ft.; S.D.

H. H. Roberts et al No. 1 Z. Douglas, S Fields Sur. 10-in. cmt. 43 ft.; drlg. 285 ft.

Marion County

Tom Bell et al No. 1 David Lane, SW C Log 2, Jones Sur. T.D. 72 ft.; S.D.
Sam Lanier No. 1 Lucey Rives, SE cor. M. G. Wall Sur. T.D. 960 ft.; W.O.S.R.
Morefield & Prince No. 1 Benefield, NE cor. Robt. Potter Sur., 4 mi. W of Oil City, La. Drk.
Holcomb & Thomason No. 1 Lizzie Henderson, 330 ft. S and E, cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S, 3,450 ft. E of NW cor. of R. Bennington Sur. Drlg. 2,400 ft.

Panola County

Danciger O. & R. Corp. No. 1 Tatum, SW cor. A. Bissell Sur. Drk.
Glassell & Glassell No. 1 Williamson, Mary Potts Sur. Drlg. 3,400 ft.
Lawrel Pet. Co. No. 1 Bucknell, B. Anderson Sur. Drlg. 4,210 ft.
Logansport P. L. Corp. No. 1 Rushing, M. Smith Sur. Acidized; tstg.; T.D. 2,734 ft.
Magnolia Pet. Co. No. 1 E. A. Hull, T Applewhite Sur. Cg. 5,200 ft.; no shows.
Matex Oil Co. No. 1 Thomas M. Alstone, 3 mi. E of Elysian field. Drlg. 2,800 ft.
White-Goodwin Synd. No. 1 Hill, Winnie Mann Sur. R.U.
Yandel Rogers No. 1 Cameron Lbr. Co., Wm. A. Lagrone Sur., 7 mi. N of Carthage. Loc.

Shelby County

Mulroy-Curtain et al No. 1 Hayden, D. G. Yardt Sur. T.D. 2,907 ft.; sh.; washing to bottom.
Potter & Rubeling C. H. Polly No. 1, Wm Wisner Sur. T.D. 4,050 ft.; M.I.H.R.
Wm. Redditt No. 1 Pickering Lbr. Co., SE cor. Stephens English Sur. R.U.
Red Wing Oil Co. No. 1 C. H. Herton, 54 ac. tr. in J. Dowlin Sur. S.D. 1,889 ft.

NORTH TEXAS WILDCATS

Archer County

L. T. Burns No. 1 White, sec. 34, A.T.N. C.L. Sur. Loc.
Tom Looney No. 1 L. F. Wilson, sec. 71, A.T.N.C.L. Sur. Loc.
J. T. Miller No. 1 J. E. Roller, W. C. Watts Sur. No. A-111. S.D.O. 1,306 ft.

Baylor County

Ingleright et al No. 1 Cope, T.E.&L. Sur. 3,122. Derrick.
S. P. Morris et al No. 1-B C. T. Porter E. Brown Sur. A-20. C.O.; T.D. 1,614 ft.

Clay County

Alexander & Goldsmith No. 1 Byers & Co., sec. 28, Byers Subd. Drlg. 1,810 ft.

Collin County

California Consld. Oil Co. No. 1 Fagg, Jas Rutherford Sur. Sd. 2,700-71 ft.; test wtr.; S.D.C. 2,780 ft.
Port Bolivar O. & R. Co. No. 1 Durning Wm. Creeger Sur. Sd. 3,940-44 ft.; tested wtr.; S.D.O.
Sorrell et al No. 1 D. R. Clark, J. Rowland Sur. Spudded and S.D.

Cooke County

Big Indian O. & D. Co. No. 1 T. E. McFadden, G. M. Bonds Sur. A-69. Drlg. 2,050 ft.
Wm. D. Compton No. 1 P. Tucker, J. Barnett Sur. A-42. Drlg. 400 ft.
B. H. Hilburn No. 1 W. A. Harris, J. Harris Sur. A-502. Fishing 1,440 ft.
Wm. G. Mappas No. 1 W. R. Harpar, W. Pettit Sur. A-812. Drlg. 1,510 ft.
C. Newburn No. 1 P. G. Dotson, W. Campbell Sur. A-238. Cmtd. lnr. 2,093 ft.; S.D.O.
Seitz et al No. 1 State Bank Charles Wheelock Sur. A-1,131. Loc.
Sinclair Prairie Oil Co. et al No. 2 A. C. McCall, H. White Sur. A-1,134. Drlg. 7025 ft.
Stuck et al No. 1 Elkins, A. J. Shannon Sur. No. A-837. Drlg. 2,305 ft.
J. Worsham et al No. 1 J. S. Clark Wm. Campbell Sur. A-238. R.U.R.

Denton County

Carlysle & Wilson No. 1 J. P. Knox, R. Howard Sur. A-542. Drlg. 1,470 ft.
J. C. Foster No. 1 Jeffcoat, J. West Sur. Drlg. 1,030 ft.
C. C. Minnick No. 1 C. N. Price, J. Doughtitt Sur. A-322. Fsg. 270 ft.
Oil Finance No. 1 J. S. Gambill. Fsg. 1,330 ft.
J. Stogner No. 1 J. Maxwell, Jno. Morton Sur. A-792. Spudded and S.D.

Grayson County

F. Galbreath et al No. 1 Singletary, Chas. Quillian Sur. A-989. Drlg. 2,250 ft.
Olson et al No. 1 D. R. Uitger, P. P. Cady Sur. A-301. Drlg. 1,550 ft.
Pete Shaner No. 1 Blair, R. H. Deavers Sur. A-313. Drlg. 2,700 ft.

Jack County

Bryson O. & G. Co. No. 1 O. Loving, T.& N.O. Sur. A-852. Drlg. 2,505 ft.
Cato Co., Inc. No. 1 Raley B. I. Hughson Sur. A-256. 7-in. 2,994 ft.; W.O.C.
Danciger O. & R. Co. No. 1 Kinder, B.S.&F. Sur. A-83. Loc.
Hanlon-Buchanan, Inc., No. 1 Galvin, E. B. Galvin Sur. S.D. 2,968 ft.

Montague County

Clark-Beckner No. 1 C. W. Bell, sec. 6, M.E.P.&P. Sur. Drk.
T. P. Frost No. 1 Johnson, sec. 6, E.T. R.R. Sur. Drlg. 1,895 ft.
W. E. Halbert No. 1 Petty, S. A. Southerland Sur. A-992. S.D.O. 1,680 ft.
L. C. Heydrick No. 1 Cliff Dowd, G. W. Browning Sur. A-1,274. Drlg. 3,250 ft.
Sinclair Prairie No. 1 Hodges, Blk. 55, K. C.S.L. Sur. Drlg. 500 ft.

Throckmorton County

Canyon O. & G. Co. No. 1 Inright, D.B.B. &C. Sur. Spdg.
R. J. Williams No. 1 W. B. Parrott, T.E.&L. Sur., sec. 961. Drlg. 2,100 ft.

Wichita County

A. E. Blair No. 1 Cody Est., sec. 311, Waggoner Col. Subd. B.S.S.O. 1,880-95 ft.; tstg.
Box & Seaberry No. 1 Krizan, Blk. 43, Cherokee Sch. Lds. S.D.O. 645 ft.
Dinsmore & Stipe No. 1 Lewis, Blk. 20, K.W.V.F.L. Sur. Drlg. 700 ft.
King Oil Co. No. 1 M. Stone, G.C.&S.F. Sur. A-758. Drlg. 1,569 ft.
T. B. Medders No. 1 Allen, H.T.&B. Sur. A-129. S.D.O. 1,300 ft.
Palmer et al No. 1 McCarty, S. O. Fowler Sur. No. A-78. Drlg. 1,320 ft.
Geo. Proctor No. 1 Burnett, sec. 1, S.A.& M.G. Sur. Drlg. 810 ft.
L. Webb No. 1 A. J. Schulz, J. Cole Sur. A-37. S.D.O. 1,720 ft.

Wilbarger County

King Oil Co. No. 2 Waggoner P, J. Poitecent Sur. A-531. Drlg. 1,275 ft.
Rathke Oil Co. No. 1 Waggoner, H.&T.C. Sur., Blk. 33. Drlg. 1,100 ft.

Young County

R. C. Albright No. 1 W. E. Steele, I.R.R Sur. A-156. Drk.
Alexander & Long No. 1 Goldston, S.P.R.R Sur. A-263. Drlg. 1,000 ft.
Associated Developers No. 1 Williamson, T.E.&L. Sur. No. 286. Drlg. 2,807 ft.
J. W. Cole No. 1 George, T.E.&L. Sur. 107. Loc.
Nash & Windfohr No. 1 F. B. Lowery, S. H. Criswell Sur. A-1,297 ft.; Drlg. 2,158 ft.
Pitzer & West No. 1 Gathright, T.E.&L. Sur. 617. Drlg. 210 ft.
States Oil Corp. No. 1 N. Laquay, A. Erwin Sur. A-1,779. Loc.
A. T. Strong No. 1 Davidson, R. C. Eddleman Sur. A-1,420. Drlg. 3,505 ft.
R. H. Vise No. 1 Dollins, T.E.&L. Sur. 615. Drlg. 575 ft.
C. V. Welch No. 1 Street, M. E. Criswell Sur. A-1,772. Drk.
L. W. Wickes No. 1 McCluskey, Green Sur. Drlg. 300 ft.
Yorktex Pet. Co. No. 1 F. G. Burnett, G. W. Hills Sur. A-151. Drlg. 4,100 ft.

WEST TEXAS WILDCATS

Andrews County

Grisham Hunter Corp. No. 1 Ratliff & Bedford. Fsg. 4,107 ft.
Wm. Hannigan No. 1 Logsden, sec. 5, Blk. A-32. S.D. 870 ft.; C.O.
R. H. Henderson No. 1 J. E. Parker, sec. 25. P.S.L. Sur. A-43. T.D. 4,556 ft.
Sinclair Prairie Oil Co. No. 1 E. Cowden, sec. 12, Blk. 44, Twp. 2n, T.&P. Sur. R.U.R.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. T.D. 3,690 ft. C.O.

Crane County

Big Basin Oil Co. No. 1 Cowden. Drlg. 3,322 ft.
Clark et al No. 1 Jordan, 660 ft. from N and E, sec. 12, Blk. B-22, P.S.L. Sur. R.U. machine.
Gulf Oil Corp. No. 2 W. N. Waddell, sec. 18, Blk. B-21. T.D. 6,709 ft.; P.B. to 6,120 ft.; testing.
Gulf Oil Corp. No. 2 McKnight, sec. 3 Blk. B-21. Straightreaming 3,702 ft.
Gulf Oil Corp. No. 2 Snodgrass, sec. 1, Blk. B-25. Drlg. 2,625 ft.
Moore Bros. No. 1 Barnsley, sec. 43, Blk 32, P.S.L. Sur. T.D. 6,262 ft.; S.D.
Navarro Oil Co. No. 1 Dawson, sec. 2, Blk. R, T.&M.R.R. Sur. Cellar.
Sawyer Drlg. Co. No. 1 McKnight, sec. 10, Blk. B-17, P.S.L. Sur. Loc.

Dawson County

Roy Albaugh et al No. 1 J. Robinson, S.D. 5,038 ft.; preparing to pump.

Ector County

Empire G. & F. Co. No. 1-D Cummins, sec. 23, Blk. 45, Twp. 1n, T.&P. Sur. T.D. 1,382 ft.; R.U.S.T.
Stanolind O. & G. Co. No. 2-B Cowden, T.D. 4,451 ft.; P.B. 4,303 ft.; fsg.

Edwards County

Plateau Oil Co. No. 1 Hatch. Drlg. 2,840 ft.

Fisher County

L. A. Daniels et al No. 1 J. J. Nickless S.D. 1,550 ft.; to run csg.
Forest Dev. Co. No. 1 A. M. Dry, sec. 108, Blk. 2, H.&T.C. Sur. T.D. 4,537 ft.; testing.
L. A. Long et al No. 1 J. L. Mayberry, sec. 56, Blk. 1, H.&T.B. Sur. Drlg. 2,700 ft.
Southern Oil Co. No. 1 Robinson, sec. 172, Blk. 2, H.&T.C. Sur., 2½ mi. NE of Raton. M.I.M.

Gaines County

Amerada Pet. Corp. No. 1-A Averitt, sec 228, Blk. G, W.T.R.R. Sur. T.D. 5,029 ft.; flowed 7 B.P.H. last 7 hrs., 12 per cent B.S.&W.; 11,700,000 ft. gas.
Amerada Pet. Corp. No. 1 Robbins, 660 ft. from N and W, sec. 9, Sur. A-22. Drk.
Stanolind O. & G. Co. No. 1 Morrow. S.D. 2,765 ft.

Glasscock County

F. Dodson et al No. 1 Carter heirs, sec. 5, Blk. 33, Twp. 3s, T.&P. Sur. T.D. 2,669 ft.; P.B. 2,664 ft.; S.D.
Fleetborn Oil Co. No. 1 Black Arrow, sec. 3, Blk. 34, Twp. 3s, T.&P. Sur. Drlg. 650 ft.
Fleetborn Oil Co. No. 1 Coulson, sec. 19, Blk. 33, Twp. 3s, T.&P. Sur. Drlg. 1,000 ft.
Moore Bros. No. 1 I.T.I.O. and McDowell, sec. 31, Blk. 34, Twp. 5s, T.&P. Sur. R.U. machine; S.D. 175 ft.

Hockley County

Texas Co. No. 1 B. Slaughter, Labour 88 League 38, Zavala Co. Sch. Lds. Drlg. by csg.; T.D. 3,065 ft.

Howard County

Johnson No 2 Hyman, sec. 88, Blk. 29, W.&N.W. Sur. Loc.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6, Set 10¾-in. csg. at 1,794 ft.; drlg. 2,102 ft.

Jeff Davis County

H. D. Wilcox et al No. 1 Jones & Coffield, sec. 121, Blk. 4, H.&T.C. Sur. Drlg. 175 ft.

Jones County

H. D. Egger et al No. 1 O. Roberts, 200 ft. from S and 2,440 ft. from E, sec. 26, Orphan Asylum Lands. Loc.
Humble O. & R. Co. No. 1 Alexander, Sub. 4, W. C. Walker Sur. Drlg. 2,025 ft.
K. O. T. Oil Co. No. 1 E. C. Duke, sec. 20, Blk. 15, T.&P. Sur., 1 mi. N of Hawley field. Fsg. 1,910 ft.
Oyster & Griffith No. 1 Bumpass, A. Jones Sur., 3 mi. SW of Truby. Drlg. 1,710 ft.
J. L. Reeves No. 1 Kelly, C. Martinez Sur 1½ mi. N of Hawley. Drlg. 1,562 ft.
Texas Inland Oil Co. No. 1 J. K. Pittard, sec. 27, Orphan Asylum Lds. Drlg. 765 ft.
Tiner et al No. 1 Rainwater, sec. 34, Blk. 2, S.P. Sur. Drlg. 1,858 ft.
Ungren & Frazier No. 1 Davis & Stemmons, Lot 7, F. M. Smith Sur. No. 3, 2½ mi. SW of Lueders. T.D. 1,505 ft.; fsg.
Ungren & Frazier No. 1 Trothers, 200 ft. from W and 600 ft. from S of E 81 acres, Lot 1, Sub. 2, E. C. Miller Sur. Loc.

Lynn County

Hart et al No. 1 Edwards, SE¼ sec. 29, L.&S.V. Sur. T.D. 5,005 ft. To deepen.

Nolan County

Dr. Robinson Co. No. 1 E. Gabler, sec. 26, Blk. X, T.&P. Sur. T.D. 270 ft.; set csg.

Pecos County

Bahan & Rhodes No. 1-B Bonebrake, sec. 116, Blk. 8, H.&G.N. Sur. S.D. 1,971 ft.
C. A. Everts No. 1 W. S. Tyrell, sec. 508, G, Montez & Duran Sur. Drlg. 1,915 ft.
Hightower Oil Corp. No. 1 Holmes, 310 ft. from E and 2,310 ft. from S, sec. 6, Blk. C-3, E.L.R.R. Sur. Drlg. 422 ft.
Kirk et al No. 1 Potts, sec. 6, Blk. 9, H.& G.N. Sur. T.D. 1,774 ft.; C.O.
E. R. Minshall, No. 1 Banker, sec. 35, Blk. 146, T.&St.L. Sur. Fsg. 2,815 ft.
S. Thompson No. 1 Elsinore Cattle Co sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 3,830 ft.
Union Oil & Mining Co. No. 2 Potts, 660 ft. N of No. 1 Potts, sec. 6, Blk. 9, H.&G.N. Sur. Drlg. 1,033 ft.
Young No. 1 Bailey, sec. 23, Blk. 178, T.C. R.R. Sur. S.D. 1,260 ft.

Presidio County

Lindeman Bros. Oil Corp. No. 1 J. R. Bledsoe & Badgley, sec. 15, Blk. 351, G.C.&S.F. R.R. Co. Sur., 2½ mi. NE of Presidio. Drlg. 2,975 ft.
A. H. Main No. 1 Greenlee, sec. 40, Blk. 347, 13 mi. NE of Marfa. Loc.

Reagan County

Bahan & Rhodes No. 1 Kloh, sec. 37, Blk. 37, Twp. 5s, T.&P. Sur., NW cor. of county. R.U. machine.

Schleicher County

Magnus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. 5,912 ft.; cable tools.

Terrell County

Ohio Oil Co. No. 1 M. H. Goode, sec. 26, Blk. 161, G.C.&S.F. Sur. S.D. 7,022 ft.

Terry County

W. L. Pickens et al No. 1 Lewright. S.D. 120 ft.
Uscan Oil Co. No. 1 Brownfield, C N¾ sec. 54, Blk. K, P.S.L. Sur. Drlg. 4,700 ft.

Tom Green County

Webb Bros. No. 1 J. F. Schrivener, Krending Sur. 1,663, 3 mi. N and E of Van Court. S.D. 664 ft.

Upton County

R. H. Henderson No. 1 Reese, sec. 16, Blk. 3½, C.C.S.D.&R.G.N.G. Sur. Drlg. 915 ft.
Moore Bros. No. 1 Giddings, Sub. 25. Throckmorton Co. Sch. Lds. Drlg. 1,500 ft.
J. H. Myles & Son No. 1 Hughes, sec. 91, Blk. Y, G.C.&S.F. Sur. R.U. spudder.
Dan Short No. 1 Webb, sec. 174, Blk. E, C.C.S.D.&R.G.N.G. Sur. S.D. 620 ft.

Ward County

Findley & Cherry No. 1 Sealey, sec. 54 Blk. F, G.M.M.B.&A. Sur. Drlg. 2,600 ft.
Prince Bros. Drlg. Co. No. 1 Monroe, sec. 52, Blk. 34, H.&T.C. Sur. Fsg. 2,846 ft.

Winkler County

Bert Fields et al No. 1 Walton, sec. 3, Blk. C-23. T.D. 3,204 ft.; P.B. 3,171 ft.; testing.
Read & Duffey No. 1 Sealey, sec. 8, Blk. A, G.M.M.B.&A. Sur. S.D. 4,012 ft.
Richardson Oils, Inc., No. 1 Humble-Walton, sec. 3, Blk. B-3, P.S.L. Sur. Cellar.

Yoakum County

Texas Pacific Coal & Oil Co. No. 1 Bennett, sec. 678, John H. Gibson Sur. S.D. 3,375 ft.

RANGER (WEST CENTRAL TEXAS) DISTRICT

Brown County

Brown & Gardner No. 1 Triplett, 1 mi. SW of Cross Cut, W. B. Travis Sur., sec. 148. Drlg. 1,325 ft.

Callahan County

H. V. House et al No. 1 R. Smart "B," 5 mi. SW of Admiral, W. T. Lassiter Sur. Spudding.
L. A. Warren No. 1 Griggs, 1 mi. S Baird, B.B.B.&C. Sur. Drlg. 1,150 ft.

Coleman County

Midfield Oil Co. No. 1 T. H. Ward, 150 ft. from N and W lines of SE SE sec. 274, W. Echels Sur. T.D. 1,000 ft.; set 10-in. csg.

Comanche County

H. L. Baughman No. 1 Hardin, Isa Hoxey Sur. S.D. 800 ft.

Eastland County

Ashburn and Luke No. 1 Scott, A. Tarter Sur. T.D. 3,118 ft.; shot with 100 qts.; C.O.
F. J. Estes No. 1 Gentry, A. Popejoy Sur. Drlg. 2,350 ft.

Hamilton County

Seaboard Oil Corp. No. 1 fee, 660 ft. from N and E lines of W½ of A. C. Grimes Sur., 10 mi. N of Hamilton. Drlg. 1,575 ft.

Palo Pinto County

W. K. Gordon et al No. 1 Cantey, sec. 44, Blk. 2, T.&P. Sur. Sd. 3,554-55 ft.; hole bridged by gas; bridge knocked out; showing wtr.; S.D.

Shackelford County

H. C. Akins et al No. 1 J. E. Swenson, C E½ sec. 14, A.B.&M. Sur. Loc.
Albany Oil and Freeman No. 1 W. Hastings, 5 mi. NW Morris-Bule pool, sec. 18, D.&S.E.R.R. Sur. Drlg. 675 ft.
C. Morton et al No. 1 G. R. Davis, C SE NE sec. 55, Blk. 13, T.&P. Sur., 17 mi. SW of Albany. Drlg. 1,498 ft.
Roberts, Calhoun & Boynton No. 1 W. H. Green, 12 mi. SW of Albany, sec. 65, T &P. Sur., Blk. 12. Loc.

Stephens County

C. B. Christie et al No. 1 E. S. Maury, 4 mi. W of Crystal Falls, 465 ft. E, 550 ft. S of J. Koehler Sur., Abst. 26. Drk. for 4,600-ft. test.
W. T. Garret et al No. 1 Echols, 6 mi. SE of Ivan, W½, sec. 10, Blk. 3, S.P.R. R. Sur. R.U.
Mudge Oil Co. No. 1 W. P. Smith, 2 mi. NW of Ivan, sec. 14, S.P.R.R. Sur., Blk. 2. Straightening crooked hole; T.D. 275 ft.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, 1,192 ft. S and 984 ft. W of NE cor. of S 288 ac. of N 538 ac. of H. Blackwell Sur., Pat. 3-1,197. Spd. and S.D.

Throckmorton County

R. J. Williams et al No. 1 W. B. Parrott, 4 mi. NW of Woodson, sec. 961, T.E.&L. Sur. Drlg. 2,100 ft.

California Fields

(Continued from Page 72)

position to make a production test on its test in the El Segundo field some time within the next week and the result of work will be watched with interest because this well has 103 feet of Conglomerate oil sand and should make a good well. It remains to be seen, however, whether it has sufficient gas pressure to result in a natural flow. In the Torrance field, Chanslor Canfield Midway Oil Co. hit the top of the schist in No. 2 Redondo at 4,350 feet and the hole will be plugged back to about 3,157 feet for a production test. The top of the schist was encountered in this well considerably higher than it was expected and as a result may tend to retard further deep tests in this immediate area. No productive Conglomerate was logged on top of the schist. In the Ascot Park district Republic Petroleum Co. logged 80 feet of poorly saturated oil sand in its wildcat at 1,405-86 feet but drilling operations were not stopped for a test as the outlook did not look any too promising. If deeper drilling proves unsuccessful the company will back up and make a test of this sand body.

Central West Fields

(Continued from Page 82)

Gas Co. is rigged up for No. 2, on the Margaret Showman farm in Granville Township, and G. H. Long is rigged up for No. 7 on the E. D. Fulton farm in Madison Township. In section 14, Bowling Green Township, Murphy & Emerald No. 1 Clarence Lynn made a small show of oil and gas in the Clinton sand and will be shot.

In Richland County, section 20, Worthington Township, Ohio Fuel Gas Co. No. 4 Minerva Ward, was completed below the Clinton at 2,495-2,506 feet and gauged 4,520,000 feet naturally.

Ohio Fuel Gas Co. No. 2, Lem Strickler, in section 23, Butler Township, Knox County, was a large commercial gas well at a depth of 3,035 feet. In section 15 the same company's No. 1 Palmer Beal was abandoned as a dry hole. In Lot 40, Monroe Township, H. H. Perkins No. 1 Thomas Wier was drilled to a total depth of 2,448 feet without a show of oil or gas and was abandoned.

In Medina County, Montville Township, Ohio Fuel Gas Co. has staked a new location on the Maude Rodgers farm, in Lot 59, and is building a rig for No. 2 on the Matilda Fleck farm in Lot 53.

In Morgan County, section 16, Deerfield Township, Appleman Brothers No. 2 William Masterson was drilled through the first Berea sand at 1,321-40 feet and was abandoned after making 10,000 feet of gas and 7 gallons of oil. In section 9, Joe Pierce is drilling up the bailer at 1,070 feet on the No. 2 Charles Nelson. In section 14, Penn Township, Penn Construction Co. No. 2 W. M. Hilaman was completed below the Salt sand at 885-90 feet and gauged 423,000 feet of gas naturally and had a rock pressure of 210 pounds. In Fraction 2, same township, Kepple & Co. is drilling No. 30 on the John S. Pidgeon property. Ohio Fuel Gas Co. has staked a location on the George Hill farm in Fraction 2, Marion Township.

Ohio Fuel Gas Co. No. 1 Burl Cotterman, in section 32, Hopewell Township, Perry County, was drilled to a total depth of 3,007 feet and has been abandoned as a dry hole.

Williams Brothers No. 2 William Crippen, in section 16, Rome Township, Athens County, was drilled through the Injun sand at 975-81 feet and was abandoned after the hole filled with water. In section 17, Lodi Township, Ohio Fuel Gas Co. completed a commercial gas well on the W. E. Seaman farm, in the Maxburg Stray sand at 596-99 feet. The same company has staked a location for No. 5 on the State of Ohio property, in section 16. The Ohio Fuel Gas Co. also completed a commercial gas well on the Black Diamond Coal Co. property, in Fraction 1, Bern Township, in second Cow Run sand at 868-75 feet. In section 18 the same operators are moving a rig on the Lambert heirs property. In section 17, Lodi Township, A. D. Townsend No. 2 John Hartley gauged 388,000 feet of gas after a shot.

In Lawrence County, section 18, Union Township, Shale Development Co. No. 1 First Huntington National Bank gauged 1,550,000 feet of gas after being shot with 4,000 pounds of gelatin.

Ohio Fuel Gas Co. No. 1 Lura Mohler, in sections 32-33, Bedford Township, Meigs County, is a small gas well in second Berea at 1,684-1,701 feet. The same operator's No. 1 Grace White, in sections 15-16, Rutland Township, was drilled through the same sand with a small show of gas and was abandoned. In section 21 Roberts & Co. is spudding on No. 3, on the Jennie Jacks farm. In section 11, Bedford Township, Stewart & Ross is spudding on the Denver Vannest farm and in section 16 A. W. Bengal is rigged up for No. 2 on the Crpha Cullums farm.

Canadian Fields

(Continued from Page 72)

River - Aldersyde area, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 15-20-29w4, is below 6,995 feet.

New Valley Production Test

North and east of the North Turner Valley field, McLeod Oil Co. No. 1 New Valley, LSD 4, section 6-21-2w5, bottoming at 6,740 feet, is testing production. It got strong shows of 38 gravity crude below 6,530 feet, the oil rising between 400 and 500 feet in the hole. Production comes from the cardium sandstone, which in the Turner Valley field is a thin marker between the Upper and Lower Benton. In the New Valley well the cardium was found more than 100 feet thick and may prove an important producing horizon. After testing the cardium, the hole may be deepened to the Madison lime, between 1,500 and 2,000 feet lower. Location is on an anticlinal structure running roughly parallel to Turner Valley, 3 miles east of Foothills Oil & Gas Co. No. 1 in North Turner Valley and 1½ miles east of Millarville.

The well is being completed by McLeod Oil Co. in return for a stock interest in the New Valley Oil Co. The latter was organized in 1926 by the late W. E. McLeod. E. H. McLeod is managing director of the New Valley company.

South Turner Valley

On the west side of the South Turner Valley structure, Sovereign Royalties No. 1 Myers & Wright, LSD 14, section 21-18-2w5, 441 feet in the lime at 6,233 feet depth, is testing production. It blew in with a wet gas flow estimated 13,000,000 feet a day. The naphtha content is rather light, initial recovery being 52 bbls. a day, which later increased to 72 bbls. with the gravity dropping from 83 to 78 Beaume. Located a mile south and one-quarter mile east of Turner Valley Royalties No. 1, it got the lime 705 feet higher and discontinued drilling in the top of the black lime. The formation is not fully cleared of fluid, and production is expected to increase considerably. Officers of Sovereign Royalties, Ltd., are: President, H. M. Mack; vice president, P. J. Timms; secretary-treasurer, W. B. O'Regan, all of Calgary.

Renfrew Royalties No. 1 Morris & Goodfellow, LSD 3, section 28-18-2w5, is 495 feet in the lime below 6,585 feet, with wet gas estimated at 12,000,000 feet a day and naphtha recovery on separator around 50 bbls. Production test will be made when the black lime is reached.

Foundation Royalties No. 1, LSD 5, section 21-18-2w5, south and west of the proven field, is 438 feet in the lime at 6,456 feet depth and fishing for lost bailer. Some 2,900 feet of rotary mud had been bailed when the sand line parted. There is considerable crude in the hole with low gas pressure, indicating the probability of a crude producer.

One mile north of Turner Valley Royalties No. 1, Sterling Pacific No. 3, LSD 13, section 33-18-2w5, got the Madison at 6,264 feet and is deepening in the lime below 6,378 feet.

West Texas Fields

(Continued from Page 75)

15 Daugherty, 2,815-2,956 feet, shot, 1,156 bbls. Shell Petroleum Corp. No. 5-J Hendrick, 2,825-3,071 feet, shot, 157 bbls. Bert Fields No. 3 Pure-Cowden, 2,851-3,000 feet, shot, 256 bbls. R. H. Henderson No. 1-B Walton, 2,835-3,045 feet, 296 bbls.

PANHANDLE COMPLETIONS

Carson County

Empire Gas & Fuel Co. No. 7-D Magnolia, 2,960-3,060 feet, shot, 743 bbls. on pump. Huber Petroleum Co. No. 4-R Burnett, 2,715-3,115 feet, plugged back to 2,730 feet, 6,505,000 feet of gas; No. 5-R Burnett, 2,305-2,720 feet, 29,320,000 feet of gas.

Gray County

Cambrian Oil Co. No. 3 Cole, 3,250-79 feet, shot, 465 bbls. on pump. Empire Gas & Fuel Co. No. 10 Cunningham, 3,215-3,300 feet, shot, 782 bbls. on pump. Gulf Oil Corp. No. 5 Barrett, 3,205-3,305 feet, shot, 702 bbls. on pump. Magnolia Petroleum Co. No. 8 Haggard, 3,270-3,327 feet, shot, 215 bbls. on pump.

Hutchinson County

Crosbie, Inc., No. 14 Pitts, 2,925-94 feet, shot, 771 bbls. on pump. Danciger Oil & Refining Co. No. 1 Hodges, 3,035-3,100 feet, shot, 18 bbls. Drilling & Exploration Co. No. 6 Haile, 2,990-3,063 feet, shot, 466 bbls. on pump. Huber Petroleum Co. No. 2 Herring, junked at 2,128 feet. Martex Oil Co. No. 2 Pitcher, 3,055-3,167 feet, shot, 483 bbls. on pump. Phillips Petroleum Co. No. 9 Perkins, 2,987-3,019 feet, shot, 272 bbls. on pump; No. 2 Snow, 2,175-2,450 feet, shot, 21,973,000 feet of gas. Skelly and Cabot Carbon Co. No. 1 Merchant, 2,275-3,000 feet, plugged back to 2,650 feet, shot, 23,994,000 feet of gas. Stanolind Oil & Gas Co. No. 6-A Moore, 3,104 feet, shot, 205 bbls. on pump.

Moore County

Phillips Petroleum Co. No. 3-66 Moore, 2,970-3,525 feet, plugged back to 3,353 feet, 41,482,000 feet of gas. Shamrock Oil & Gas Co. No. 1-C Jones, 3,495 feet, plugged back to 3,345 feet, 36,242,000 feet of gas.

Wheeler County

Barnett Petroleum Co. No. 4 Stewart, 2,112-25 feet, 138 bbls. Marfax Oil Co. No. 2 Stewart, 2,120-45 feet, 103 bbls. Rogers and others No. 1 Timberlake, dry and abandoned 4,361 feet, elevation 2,136 feet.

NORTH TEXAS COMPLETIONS

Archer County

L. T. Burns No. 2 Lowery, 1,503-06 feet, 10 bbls. Kimbell & Bohner No. 14 Carpenter, 1,048-55 feet, 15 bbls. Rathke Oil Co. No. 2 Meade, 1,435-54 feet, 20 bbls. Wilson & Russell No. 21 Prideaux, 654-64 feet, 10 bbls.

Cooke County

Anderson & Kerr No. 4 Wilson, 1,985-2,000 feet, 200 bbls. Burk Royalty Co. No. 3 Talbot, 1,826 feet, dry. Denver Producing & Refining Co. No. 10 Wilson, 1,956-78 feet, 225 bbls. Leo Portman No. 2 F. A. Bruhlmeyer, 2,107-15 feet, 100 bbls. Ripps & Ungerman No. 2 W. L. Johnson, 1,915-25 feet, 220 bbls. Schermerhorn Oil Co. No. 5 F. J. Hess, 755-840 feet, 15 bbls.

Montague County

Continental Oil Co. No. 5 Hinton, 756-73 feet, 60 bbls. Lesh & McCall No. 9 R. W. Cunningham, 916-29 feet, 35 bbls. Texas Co. No. 30 Rowland, 1,358-77 feet, 20 bbls.

Jack County

Brazos River Gas Co. No. 3 J. A. Jones, 2,323-49 feet, 50 bbls. N. B. Crenshaw No. 1 M. B. Cooke, 2,924-35 feet, 325 bbls. Dalton and others No. 1 Hilburn, 803 feet, dry. K. E. Edmond No. 3 Hunt, 460-70 feet, 10 bbls. Josaline Oil Co. No. 1 Eatherley, 2,967-99 feet, 800 bbls. L. A. Long and others No. 1 Wolton, 3,360 feet, dry. W. P. Luck and others No. 2 C. P. Clayton, 2,951-88 feet, 600 bbls. W. H. Rose No. 1 M. Covington, 380 feet, dry. Taubert & McKee No. 1 R. H. Eatherley, 2,970-3,000 feet, 550 bbls.

Throckmorton County

Canyon Oil & Gas Co. No. 1 L. D. Lilly, 417 feet, dry.

Wichita County

Continental Oil Co. No. 4 T. L. Burnett A, 1,950 feet, dry; No. 15 Waggoner Brothers C, 1,757-64 feet, 20 bbls. G. W. Cooper No. 1 Foster & Allen, 2,102 feet, dry. Duke and others No. 1 Guyer, 145-55 feet, 5 bbls. King Oil Co. No. 2 Waggoner I, 1,024-36 feet, 35 bbls. W. B. Omohundro No. 4 S. P. Gibson B, 1,892-1,922 feet, 135 bbls. Floyd Pace No. 11 Allen, 876-84 feet, 20 bbls. Pois and others No. 1 Foster D, 2,182 feet, dry. Sussex Oil Co. No. 2 Saunders, 1,904 feet, dry. Wilson & Ligon No. 5 Foster, 1,305 feet, dry.

Young County

Anderson & Hunt No. 1 E. W. Hunt, 1,115 feet, dry. Bohner & Gilmore No. 5 Prideaux A, 583 feet, dry. Brazos River Gas Co. No. 3 State, 3,918-25 feet, 900 bbls. L. T. Burns No. 7 Andrews, 951 feet, dry. W. F. Collins No. 1 Terrell, 741 feet, dry. Daniel Production Co. No. 2 I. H. Gathright, 868 feet, dry. J. H. Davis No. 1 A. C. Casey, 625 feet, dry. Foote and others No. 1 Nall, 678 feet, dry. Hamilton No. 18 Jeffery, 845-50 feet, 40 bbls. Hinson & Tidwell No. 1 Jeffery, 4,200 feet, dry.

C. A. Johnson No. 1 Neal Wilburn, 1,458 feet, dry. Kimmell Lea & Co. No. 2 H. O. Prideaux, 644-65 feet, 15 bbls. J. H. Kleiner No. 17 Graham, 715 feet, dry. Panhandle Refining Co. No. 10 R. O. Prideaux, 738-50 feet, 5 bbls.; No. 12 R. O. Prideaux, 744-55 feet, 5 bbls.; No. 13 R. O. Prideaux, 791 feet, dry. Pitzer West and others No. 1 Collins, 3,785-3,800 feet, 650 bbls. Wooten & Wilson No. 4 S. L. Scott, 745-55 feet, 40 bbls. W. H. Yeargin and others No. 10 Belknap Coal Co., 696-700 feet, 10 bbls.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1936 High	1936 Low	Week ended Nov. 28 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1935	1935 High	1935 Low	1934 High	1934 Low
125½	75	2,700	102½	94⅛	102	Amerada Corp.	788,675	N.P.	50cQ	10-31-36	$2.00	80	48½	55⅝	39
35⅛	26⅝	10,300	31¾	30½	31¾	Atlantic Refining	2,664,904	$25	50cQ¶	12-15-36	1.00	28	20½	35¼	21½
20⅝	14⅛	24,600	20	18¾	19⅞	Barnsdall Corp.	2,131,090	$5	20cQ	11-2-36	‡.20	14¾	5⅞	10	5⅞
23⅜	14	69,100	18¾	17⅝	18½	Columbia Gas & Elec.	11,610,036	N.P.	20c	11-16-36	.20	15¾	3⅜	19¼	6⅝
15¼	11½	45,200	13¾	12¾	13⅜	Consolidated Oil Corp.	13,983,287	N.P.	40cQ¶	11-16-36	.25	12¼	6½	14¼	7¼
39	28½	32,100	37⅞	35⅝	37¾	Continental Oil of Delaware	4,682,671	$5	25c Spl.	12-15-36	.62½	35	15⅛	22¾	15¾
34¾	21	9,200	26⅞	24½	26⅞	Barber Co.	387,149	$10	50c	12-10-36	.25	22½	11¾	23½	12
12¼	6⅜	68,100	10⅞	9⅝	10⅝	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	7	1½	5⅝	2½
30⅞	17¼	7,000	29½	27¼	29	Mid-Continent Petroleum	1,843,872	$10	75cSA	12-1-36	.40	20½	9½	14¾	9⅛
26¼	16¾	1,200	23	21½	22¾	Mission Corporation	1,399,345	N.P.	....	.....	....	17¾	10⅜	..	..
75½	19⅞	1,900	70	67¼	68½	National Supply of Delaware	382,591	$25	....	5-15-31	....	20⅞	9	21⅛	10
17½	12⅛	40,900	14⅝	13⅝	14½	Ohio Oil Co.	6,563,377	N.P.	35cSA	12-15-36	.30	14¼	9¼	15⅞	8½
18⅞	11¾	2,300	18⅝	17½	18½	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.25	14	6¾	9⅜	5½
4¼	1⅜	5,200	3⅛	2¼	2⅞	Panhandle P. & R.	198,770	N.P.	....	.....	....	1⅞	½	2½	⅝
49⅜	38⅛	21,700	46⅝	43⅝	46¼	Phillips Petroleum	4,152,836	N.P.	$1Q¶	12-1-36	1.25	40	13¾	20¾	13⅜
20⅝	11⅞	12,000	20	18	20	Plymouth Oil Co.	1,050,000	$5	40c	12-22-36	.25	13	6½	16¾	7¼
24⅞	16	30,900	18½	17¼	18¼	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	17	5⅞	14⅞	6⅛
43⅝	30½	12,700	36	32⅛	35⅞	Seaboard Oil of Delaware	1,244,283	N.P.	25cQ	12-15-36	1.00	36⅞	20¾	33⅜	20¾
28	14¾	22,800	27⅜	24¾	26⅞	Shell Union Oil	13,070,625	N.P.	25c	12-15-36	....	16½	5½	11½	6
127½	110½	8,900	127½	124¾	125¾	Shell Union Oil pfd.	400,000	$100	26⅛c	12-15-36	....	111	63⅛	89	57
6¾	3½	400	4	3¾	4	Simms Petroleum	461,698	$10	$1.25 liq.	7-20-36	11.75 liq.	18¾	4¾	17⅛	7¼
37¼	19½	4,600	36⅞	34	36⅞	Skelly Oil	1,008,514	$15	....	12-15-30	....	20½	6½	11½	6
17½	12½	76,600	16½	15⅝	16¼	Socony-Vacuum	31,151,075	$15	25cSpl.	12-15-36	.30	15¾	10⅝	19⅞	12½
47⅝	35	18,800	39¼	38	38¾	Standard Oil of California	13,014,754	N.P.	30cQ¶	12-15-36	1.00	41⅛	27¾	42⅞	26½
45¼	32¾	20,400	44	42⅞	43¾	Standard Oil (Indiana)	15,215,677	$25	$1.25Q¶	12-15-36	1.00	33⅜	23	32¾	23¼
30¾	25	400	30⅜	30	30	Standard Oil of Kansas	200,000	$10	....	10-31-34	....	32	20	41	26
70⅛	51⅛	46,000	66⅞	64⅝	66⅛	Standard Oil of New Jersey	25,856,081	$25	$1.25SA¶	12-15-36	‖1.25	52⅜	35¾	50⅛	39¼
91	72	1,600	77	76¾	76¾	Sun Oil	1,733,013	N.P.	25cQ**	12-15-36	$1 & 7% Stk.	77	60½	74¼	51½
50⅜	28⅞	33,700	49¾	46	49⅛	Texas Corp.	9,340,069	$25	25cQ†	1-1-37	1.00	30¼	16½	29⅜	19⅝
15¼	7½	27,700	13⅜	11⅞	13⅜	Texas Pacific Coal & Oil	880,703	$10	25c	8-1-36	....	9¼	3¼	6½	2½
7½	4⅜	16,700	6¾	6	6⅝	Texas Gulf Producing Co.	888,088	N.P.	5c	12-15-36	....	4¾	2½	7	3⅜
21⅝	14¾	16,900	20⅜	19⅜	20	Tide Water Associated	5,642,342	N.P.	15cQ	12-1-36	....	15⅞	7⅝	14⅜	8
106½	100⅝	1,200	105¼	104⅞	105	Tide Water Associated pfd.	626,221	$100	$1.50Q	1-2-37	§6.50	104½	84	87	64½
28½	20¾	14,500	25½	23¾	25	Union Oil of California	4,386,070	$25	25cQ	11-10-36	1.00	24	14¾	20½	11½
31⅝	22⅝	1,100	28½	27½	28½	Union Tank Car Co.	1,200,000	N.P.	30cQ	12-1-36	1.20	26½	20⅞	25¾	15⅝
5¼	2¾	9,900	4⅜	3¾	4¼	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	3⅛	1	5¾	2

*Ex-dividend. †Plus extras. ‡Also 50 per cent in stock of Barnsdall Ref. §Partly on account of accumulation. ‖Dividend 4/75 Mission Corp. paid 3-15-35. ¶Includes extras.
**Plus 6% stock.

New York Curb Exchange

1936 High	1936 Low	Week ended Nov. 28 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1935	1935 High	1935 Low	1934 High	1934 Low
21	13¼	2,000	19⅛	17¾	19	Bridgeport Machine Co.	260,000	N.P.	$1	12-21-36	....	14⅛	3¾	3¾	⅓
50	39¾	No sales ..	..	..	..	Buckeye Pipe Line Co.	200,000	$50	$1Q	12-15-36	$3.00	42½	30½	38	26
4⅞	1⅞	9,600	2½	2⅛	2¼	Carib Syndicate	799,020	25c	....	.....	....	4¼	1⅝	5½	1½
124¾	105	250	120	117¾	117¾	Chesebrough Mfg. Co.	120,000	$25	$2.50Q†	12-21-36	6.50	157	115	150	116
7⅜	3	34,600	3¾	3⅝	3⅜	Cities Service	37,804,394	N.P.	....	6-1-32	....	3¼	¾	4¼	1¼
4⅛	1½	8,200	3¼	2⅞	3¼	Cosden Oil	399,687	$1	....	.....	....	1½	¼	3⅞	½
34¾	19⅞	26,900	33½	31⅛	32⅝	Creole Petroleum	6,974,356	$5	25cSA	12-15-36	.20	23¾	10	14⅜	9⅝
15¼	9	5,300	16	14⅝	16	Darby Petroleum	351,390	$5	25cSA	7-15-36	.50	8⅞	4	7½	4⅛
6¾	1⅞	5,400	6⅛	5⅞	6⅛	Derby Oil & Refining	263,162	N.P.	....	.....	....	2	¾	2¼	1
47	38½	No sales ..	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	11-2-36	4.00	38	33¼	37	30
117	72	7,800	108¾	102⅞	108½	Gulf Oil Corp.	4,538,101	$25	75c†	12-10-36	....	74¾	50¼	76¾	49¾
76½	57	9,500	72⅞	69⅛	72¼	Humble Oil & Refining (new)	8,923,935	N.P.	50c†	12-26-36	1.25	64	44	49½	33¼
24½	20	5,000	22⅛	21	21⅝	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-36	1.25	22½	15⅜	17⅞	12⅝
9¾	5½	400	8⅜	8	8¾	Indiana Pipe Line	300,000	$10	20c Spl.	12-17-36	.35	6⅛	3⅝	6⅞	3⅝
39⅝	32⅞	4,400	37⅛	35½	35½	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-36	2.50	39¾	28	33⅜	19⅜
15⅜	9⅞	8,600	13⅝	13	13½	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-36	.10	11⅜	4⅜	5	2⅛
15½	7⅜	4,400	14½	14⅛	14⅜	Lion Oil Refining	270,000	N.P.	50c	10-15-36	....	8⅛	3½	6	3⅜
14¼	9⅞	2,800	12⅛	11⅜	12⅛	Lone Star Gas	5,382,723	N.P.	20c	12-24-36	.30	10⅞	4½	8⅜	4¼
8⅜	5	2,400	6⅞	6½	6⅞	Mountain Producers	1,682,182	$10	30cSA	12-21-36	.90	5¾	4⅛	5½	4
23	17⅝	2,900	18⅞	18⅜	18⅞	National Fuel Gas	3,810,183	N.P.	25cQ	10-15-36	1.25	20	11¾	18⅛	13⅛
15¾	9¼	1,200	10⅜	10¼	10⅝	National Transit	509,000	$12.50	35cSA	12-15-36	.75	10⅝	6¾	9½	7
4½	2⅞	3,100	4½	3½	4½	New Bradford Oil	1,445,202	$5	10cSA	5-15-36	.20	3¼	2	2½	1⅜
6⅜	1⅝	2,000	3	2⅝	2⅞	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	2½	1	2¾	1
6¼	4¼	200	5⅛	5	5	New York Transit	100,000	$5	15cSA	10-15-36	.30	4⅞	3	4¾	3
9½	4⅞	200	9½	9½	9½	Northern Pipe Line	120,000	$10	35c	1-2-37	.50	8	5¼	7	4⅝
8⅛	3¼	195,600	8⅛	6¾	8⅛	Pantepec Oil	1,608,700	N.P.	....	.....	....	4⅜	1¼	2⅝	⅞
19¼	4½	10,300	14½	13¾	14¼	Root Petroleum Co.	336,045	$1	25c	8-1-36	....	5	1½	..	..
4¾	1⅞	900	3¼	3	3¼	Ryan Consolidated	296,931	N.P.	....	.....	....	2½	⅝	3⅜	⅞
42⅛	32½	800	42⅛	41¾	42	South Penn Oil	1,200,000	$25	60c†	9-30-36	1.35	34½	21⅝	26½	17½
7⅞	3¼	200	4½	4⅛	4⅛	Southern Pipe Line	100,000	$10	10cSA	9-1-36	.30	5	3⅞	5½	3½
60	44¾	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	10-1-36	5.00	56	44¼	47	41
23⅜	17⅛	3,600	21⅝	20	20¼	Standard Oil of Kentucky	2,604,790	$10	50cQ†	12-15-36	1.25	24	18	18⅜	14⅝
14⅝	11	No sales ..	..	..	..	Standard Oil of Nebraska	188,403	$25	25c	12-19-36	....	12	7¾	16⅞	8¼
40	21¾	3,400	38	37	37¼	Standard Oil of Ohio	753,740	$25	25c	10-15-36	....	23⅝	11½	28½	12¼
5	2⅝	6,500	3⅝	3¼	3½	Sunray Oil	1,610,810	$1	5c	12-21-36	....	2⅞	⅞	2	⅛
9¾	5⅜	2,400	6⅛	5¾	6⅛	Texon Oil & Land	336,028	$2	15cQ	9-30-36	.60	6⅞	5	11	4⅜

*Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

PERSONAL

W. A. MAY, formerly pipe line scout, then assistant to the superintendent of the Texas Pipe Line Company in East Texas, was promoted to superintendent of the Corpus Christi district and transferred to that city by the company. "Whitey," as he is well known to his friends, has been with the company 22 years and was one of the best posted men on the East Texas field during its busiest days, scouting that field for five and a half years. Scouts in the district with the other companies were glad to see Mr. May get the promotion, but sorry to see him transferred.

PHIL ASWERUS, repressuring engineer of Owensboro, Ky., returned November 15 from a two weeks' trip through Tennessee.

PAUL M. BUTTERMAN, head of the geological and land departments for the Cartiers Oil Company of Pittsburgh, Pa., has just returned to his headquarters at Mount Pleasant, Mich., after attending the Texas Centennial at Dallas and Fort Worth, Tex.

J. M. NISBET, manager of the land and geological division of the Empire Oil & Refining Company, has resigned, effective January 1, 1937. He was employed by the Empire Companies in 1916 upon graduation from Stanford University, where he specialized in geology and mining. After various field assignments in Kansas, Louisiana and Texas, he was transferred to the Bartlesville, Okla., office in 1921, where he was later promoted to chief geologist. In March, 1934, he was promoted to his present position in charge of geological work and leasing for the company. Mr. Nisbet plans to locate in Upland, Calif., for the present where he will devote his time to his personal interests.

MAX W. BALL, president, Abasand Oils, Ltd., has returned to his Toronto, Canada, office from New York City.

ED KOPP, representative for the Drane Tank Company, Fort Worth, Tex., and family visited relatives over the Thanksgiving holiday at Springfield, Mo.

H. R. CARPENTER, sales manager for the Jarecki Manufacturing Company, Bartlesville, Okla., has recently returned to his duties after a period of illness.

L. H. PRICHARD, president, Anderson-Prichard Oil Company of Oklahoma City, Okla., is a member of a party spending several days in Southwest Texas hunting deer, wild turkey, duck and geese.

R. C. (SPEEDY) FAST has joined the sales staff of the Coastal Supply Company of Houston, Tex. He was formerly associated with Oil Well Supply Company in domestic and foreign fields.

GEORGE R. WESLEY, assistant state geologist of the Kentucky Department of Mines and Minerals, recently returned to his office in Owensboro, Ky., from Lexington, Ky., where he had been doing special work at the department headquarters.

ALBERT PFEUFFER, former Pure Oil Company employe at Saginaw, Mich., has been transferred to the Greedvale producing division.

WALLACE A. BELSTROM, vice president of the Mills Bennett Production Company, Houston, Tex., is spending a short vacation at Temple, Tex.

DR. A. F. GRIDER, consulting geologist of Shreveport, La., attended the recent meeting of Rodessa operators at Baton Rouge, La., and testified at the hearing.

D. R. PFLUG, chief construction engineer at United Gas Public Service Company's Rodessa, La., compressor station, spent Thanksgiving in Houston, Tex.

A. M. VENABLES, credit manager of the Calgary, Alberta, branch of North Star Oils, Ltd., has been appointed general credit manager for the company with headquarters at Winnipeg, Manitoba.

A. E. BRADSHAW, president, National Bank of Tulsa, has been appointed a member of the executive committee of the Kansas and Oklahoma division of the Mid-Continent Oil and Gas Association.

CLARENCE TOPE, Mount Pleasant, Mich., oil operator, and MISS MILDRED BARNES, of Mount Pleasant, recently were married in Indiana. They returned to make their home in Mount Pleasant last week.

W. R. MACARTHUR, managing director of the western division of North Star Oils, Ltd., and a resident of Calgary, Alberta, for the past 20 years, has left for Winnipeg, Manitoba, to assume charge of sales for the company in all branches from the head of the Great Lakes to central British Columbia.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The Buffalo Gas Company and some other western New York gas companies will be consolidated into the Iroquois Natural Gas Company if the New York Public Service Utilities Commission consents.

James E. O'Neil is elected president of the Prairie Oil & Gas Company; A. C. Bedford and N. K. Moody, vice presidents; Clark H. Kountz, secretary, and E. T. Patterson, treasurer.

There are 148,440 oil wells in the United States. They average about 4 bbls. per day per well. A well close to the Drake well has been producing over 45 years.

20 YEARS AGO

Mr. and Mrs. Calvin N. Payne celebrate their golden wedding anniversary in Titusville, Pa. Mr. Payne retired 10 years ago after many years with the Standard Oil Company as a natural gas and pipe line executive.

John W. Newell, hotel man and oil producer of Pittsburgh, Pa., dies from injuries received in an automobile accident.

R. A. (Berry) Griffith of Tulsa resigns as division manager of Continental Supply Company to become assistant to Vice President E. Rogers Kemp of Sinclair Oil & Refining Company.

John D. Archbold, 68, president of the Standard Oil Company of New Jersey, dies at his home in Tarrytown, N. Y.

10 YEARS AGO

Standardization of oil-field equipment is one of the big subjects being considered by the oil industry.

A 20-inch natural gas line will be laid from the Texas Panhandle fields to Denver, Colo.

Charles W. Kramer, superintendent of the Arkansas Natural Gas & Fuel Company, dies in Shreveport, La.

JAY WHITE, Mount Pleasant, Mich., oil operator, is planning to spend two weeks at W. L. McCLANAHAN'S southern home in Georgia soon.

HAROLD C. RALPH of Vancouver, British Columbia, is in Calgary, Alberta, in connection with projected development work in the Turner Valley.

J. EDWARD JONES of New York and J. DUDLEY CLARK of Boston, Mass., associated in Rodessa oil properties, flew to Shreveport, La., for an inspection trip this week.

JOHN W. CARTER, scout for the Tide Water Oil Company at Houston, Tex., has been transferred to San Antonio, Tex., to replace CARL WEAVER who has been transferred to Corpus Christi, Tex.

F. W. MARTIN, drilling contractor and operator, formerly of Tulsa, has moved home offices to Shreveport, La. KENNETH GARDNER and ED YATES, both moved from Tulsa to the newly established office.

HON. C. C. ROSS, minister of Lands and Mines for Alberta, has returned to Edmonton, Alberta, from eastern Canada. On his way home he attended the American Petroleum Institute convention at Chicago.

L. A. MEKLER, combustion engineer of Universal Oil Products Company, addressed the Western Society of Engineers in Chicago on November 23. His subject was, "Recent Developments in the Production of Motor Fuel."

MRS. ROBERT M. S. OWEN, formerly of Edmonton, Alberta, will leave England shortly to join her husband at Naft Knaheh, near Bagdad, Persia, where MR. OWEN is petroleum geologist for the Anglo-Iranian Oil Company.

PARAGRAPHS

RAYMOND BENJAMIN of San Francisco, Calif., and Washington, D. C., EDWARD CLIFFORD of Washington, and HIRAM BINGHAM, former United States senator from Connecticut, executives of the Conservative Oil Company, visited company holdings in the Corpus Christi, Tex., district last week. The company has production principally in Nueces and Duval counties, Southwest Texas.

W. H. MEIER, chairman of the Central Committee on District Activities of the American Petroleum Institute, with the approval of W. L. McLAINE, chairman of the Pacific Coast District Advisory Committee, has appointed L. L. AUBERT of the Bankline Oil Company as chairman of the Pacific district to succeed ROY SILENT, deceased, for the unexpired term which will terminate at the spring meeting of the Pacific Coast district in March, 1937. Personnel of district officers of the Pacific Coast division of the American Petroleum Institute consists of L. L. AUBERT, chairman; W. L. BAGBY, of Shell Oil Company, vice chairman for the coastal district; LLOYD WILLIAMSON, of California Star Oil Company, vice chairman for San Joaquin Valley; W. G. COREY, of Pacific Gear & Tool Works, treasurer, and D. S. KILGOUR, of California Oil and Gas Association, secretary.

E. M. PINCKARD, scout for the Pure Oil Company, Houston, Tex., is spending his vacation deer hunting in Southwest Texas.

F. E. LACAZE, district manager for United Gas Public Service Company, Shreveport, La., is now on an extended deer hunt in Old Mexico.

E. J. GIBSON of Spokane, Wash., visited Calgary, Alberta, recently, and inspected drilling operations in the Turner Valley field and on the Kootenay dome.

B. B. CURRIE has been transferred from Oklahoma City, Okla., to assume charge of the newly established Jarecki Manufacturing Company store at Rodessa, La.

A. P. STILES, sales representative for Union Wire Rope Corporation, formerly of Tulsa, has established headquarters in Shreveport, La., for the Arkansas-Louisiana-Texas area.

LEON KRAUSE has joined the Geologic Standards Company, coming from the Quaker State companies of Bradford, Pa. Mr. Krause is a graduate of the school of petroleum engineering at the Pennsylvania State College, and has had considerable experience in secondary recovery methods in the East.

DR. JACQUE C. MORRELL, associate director of research for the Universal Oil Products Company, was one of a group of 20 distinguished inventors who were guests of honor at the dinner which closed the Centennial Celebration of the American Patent System, held in Washington, November 23. Names of candidates for the honor of representing invention in the various branches of American industry were submitted by appropriate divisions of the United States patent office. Doctor Morrell was named as an outstanding inventor in the oil industry.

REESE CLEVELAND, with the Indian Territory Illuminating Oil Company, has been transferred from Wichita, Kans., to Midland, Tex., to replace J. W. RETTIF, who recently resigned from the land department to enter business as an independent operator.

E. P. GALBREATH, twice manager of the Indianapolis division of the Standard Oil Company (Indiana), will retire on company annuity on January 1, 1937, after 34 years service. H. E. HANSON, manager at Joliet, Ill,. will succeed Mr. Galbreath; C. M. MONSON of Saginaw, Mich., will take Mr. Hanson's place; E. R. SOOP of Sioux City, Iowa, will go to Saginaw; JOSEPH W. HONOMICHL of St. Louis, Mo., will go to Sioux City; E. G. ROUNDS of Peoria, Ill., will take the St. Louis management, and O. V. SAPPENFIELD, sales promoter at Peoria, will succeed Mr. Rounds as assistant manager at Peoria. Thus one retirement resulted in four transfers and two promotions.

H. L. PAINTER, Union Oil Company, division sales promotion supervisor, northern division, with headquarters at Seattle, entered employ of the company nine years ago. He started in sales promotion work in the Phoenix, Ariz., district in 1927, and the following year was transferred to Fresno, Calif., to carry on in a similar capacity. In 1929 he was moved to Los Angeles in charge of sales promotion activities, and in 1931 was sent to Spokane as special agent. When the northern division was instituted in 1933 he was appointed district sales manager at Olympia.

EARL D. WALLACE of Petroleum Exploration, Lexington, Ky., made a recent business trip through Urbana, Ill., and Owensboro, Ky.

One of Colonel's Boys

In selecting employes for his early oil operations Colonel John J. Carter, founder of the Carter Oil Company, seems to have had the knack of picking winners, for many of them attained high place in later years. One of them was T. E. Mobley, now a director of the Standard-Vacuum Oil Company, in charge of its producing operations. His first job in the petroleum industry was with the Eureka Pipe Line Company in 1898; but in less than two years he was on the payroll of the Carter Oil Company as a yardman, and he continued in the service of that company 26 years. In his last nine years with Carter Mr. Mobley was superintendent of the company's eastern division, for he had risen steadily.

T. E. MOBLEY

In 1913 Mr. Mobley accompanied Colonel Carter, president, to Peru to investigate properties of the London-Pacific Petroleum Company. In 1914 Mr. Mobley accompanied Colonel Carter to Oklahoma and supervised the drilling of the Carter's first well in that state. In the seven years from 1925 to 1932 Mr. Mobley was in charge of operations in Venezuela, Argentina, Bolivia and Trinidad.

Mr. Mobley was transferred in 1932 to the Nederlandsche Koloniale Petroleum Maatschappij, which operates in the Dutch East Indies, with headquarters in The Hague, Holland. A year later when the Standard Oil Company of New Jersey and Socony-Vacuum interests formed the Standard-Vacuum Oil Company to operate its properties in the Orient, Mr. Mobley returned to New York to assume his present post. He was born in Woodsfield, Ohio, March 18, 1878.

P. E. FITZGERALD, geologist for Dowell Incorporated, has returned to Tulsa after attending a meeting of the research committee in Midland, Mich.

LEROY SMITHERS, construction engineer for Dowell, Incorporated, has been engaged in erecting a new station for his company at Eureka, Kans.

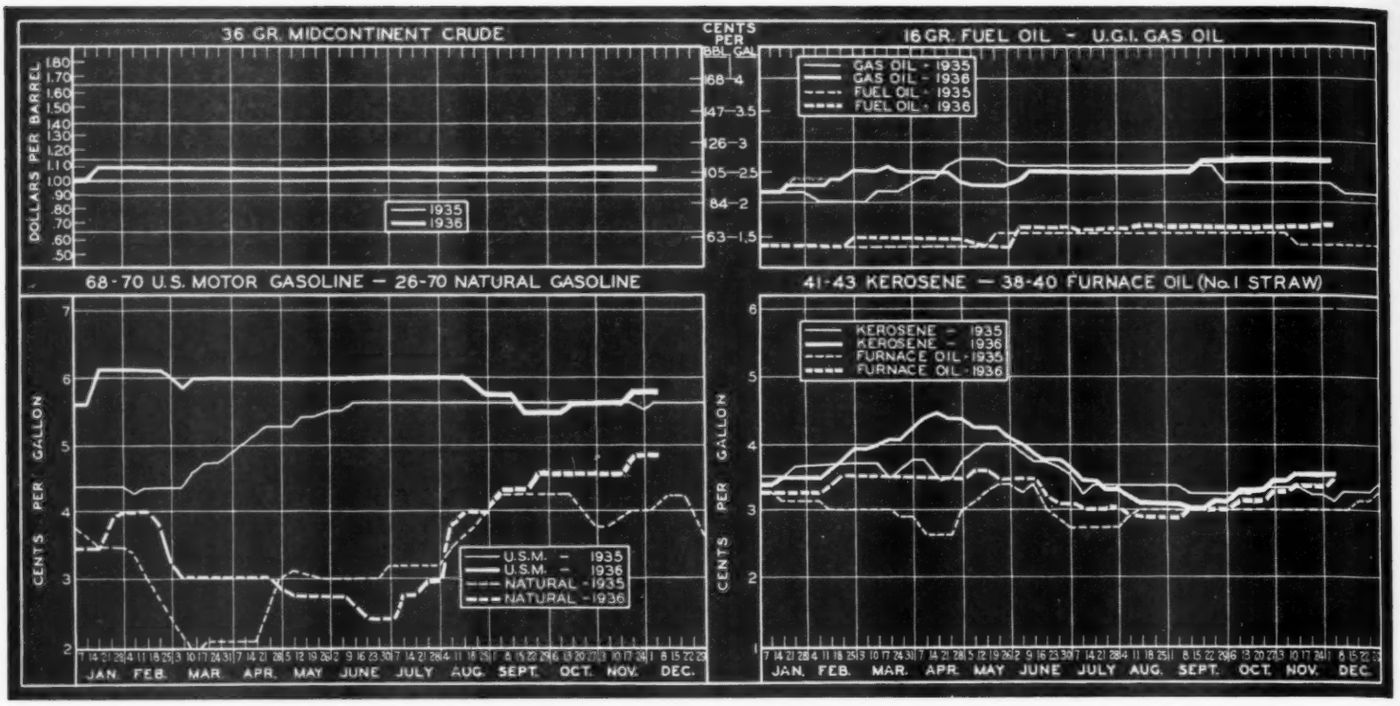
J. VANE HOWARD of Chatham, Ontario, was elected a director of the Middleton-Norfolk Oil & Gas Company of Stratford at its annual meeting recently.

JOHN G. STAUDT, assistant manager for Dowell, Incorporated, has been on an extended trip to the executive offices of his company at Midland, Mich.

MAJOR J. R. LOWERY of Vancouver, British Columbia, was in Calgary, Alberta, recently, and also inspected drilling operations on the Del Bonita structure in southern Alberta.

F. F. SCHAUER, vice president of the Equitable Gas Company, Pittsburgh, Pa.; T. E. FITZGERALD, vice president of the Pittsburgh Railway Company, and E. W. JUDY, vice president of the Duquesne Light Company, have been elected directors of the Philadelphia Company.

F. A. LEOVY, vice president of Gulf Oil Corporation, headed a party of officials of that organization who made an inspection trip through North Louisiana fields in the past week. Others in the party were DR. K. C. HEALD, chief geologist, of Pittsburgh; WALTER B. PYRON, vice president, and C. E. KINCADE, of the pipe line company, Houston, Tex.; C. R. MINOR, Shreveport district manager; ROY HAZZARD, geologist, and R. F. LEWIS, district superintendent, Shreveport.


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
1935
1936
CENTS PER BBL. GAL
16 GR. FUEL OIL - U.G.I. GAS OIL
GAS OIL - 1935
GAS OIL - 1936
FUEL OIL - 1935
FUEL OIL - 1936
68 - 70 U.S. MOTOR GASOLINE — 26-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. - 1935
U.S.M. - 1936
NATURAL - 1935
NATURAL - 1936
41-43 KEROSENE — 38-40 FURNACE OIL (No. 1 STRAW)
KEROSENE - 1935
KEROSENE - 1936
FURNACE OIL - 1935
FURNACE OIL - 1936
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Spirited Demand for Fuel Oils Pushes Group 3 Prices to Higher Levels

By T. F. SMILEY

Bounding demand for the heating oils was hoisting quotations to still higher altitudes in the Group 3 market this week. Thinning crude supplies, along with brisk consumption, were imparting a firm tone to the motor fuels. Natural gasoline, under the influence of vigorous buying, was moving into a stronger position.

In the fuel-oil division buyers were hard pressed to find material. Observers predicted that the 1936-37 season would witness a greater scarcity than that of last year if weather conditions should prove similar. Little weight is attached in the trade generally to suggestions that some refineries may be holding large stocks for the higher prices expected to rule later. The commonly accepted view is that the large refiners have only comfortable working stocks. Tending to confirm this view is the fact that integrated companies are carefully budgeting allotments to their own retail divisions.

CAUTIONING THE RETAILERS

Retail divisions asking for shipments in excess of their original estimates of fuel-oil needs are being cautioned that any extra deliveries now will mean proportionately reduced deliveries in January, February and March. The explanation of this seemingly strange policy is the simple one that the overall management insists that the wholesale division receive the same consideration as the retail in the apportionment of supplies. Refiners who have any fuel oil which they can put into the open market are disposed to give it to customers who buy gasoline from them.

Kerosene, keeping step with the furnace oils, was exhibiting increasing strength this week. Refiners reported that though this is an off season for tractor fuels as such, there was a substantial call for the 40-42 grade, utilized as range oil.

Refined Oil Market Barometer

A vigorous market for fuel oils prevails in almost all areas, with prospect of increasing scarcity. Jobbers buying in the open market to keep stocks at high level. Motor fuel maintains its firm tone under the influence of declining stocks and tightening crude supply, along with prolongation of motoring weather. Natural gasoline in brisk refinery demand.

MID-CONTINENT. Fuels buoyant. Gasoline firm. Natural vigorous.

EAST COAST. Fuel oils expected to go higher. Motor fuel steady.

GULF COAST. Gasoline firm. Kerosene and burning oils strong.

PENNSYLVANIA. Gasoline firmer. Lubricants vigorous. Fuels slightly easier.

CALIFORNIA. Gasoline, fuel oil and diesel weaker, but little change in prices.

CHICAGO. Fuel oils tight. Gasoline steady. Lubricants improving.

Indicative of the mounting difficulty encountered by some refiners in getting crude supplies are stories of unusual devices resorted to. Although there is general denial that actual premiums are being paid, arrangements that effect the same result are described. One owner of six wells in East Texas, according to report, will profit $6,000 in the ensuing year by such an arrangement which does not mention "premium."

Continuance of pleasant motoring weather was reported throughout many areas, contributing additional stimulus to the gasoline market. Refiners are understood to be planning for an increase of 8 to 10 per cent in the gasoline requirements of the first quarter of 1937 over those of 1936.

NATURALS STRONG

The naturals, notwithstanding the high level of prices in comparison with the refined product, were exceedingly strong. Refiners were buying liberally and except for material described as off-specification there seemed to be a place for every gallon produced. Several reasons were assigned for the vigor shown. One lay in the wish of refiners to reduce their stocks to the lowest possible point before the end of the year. To accomplish this refiners are buying natural gasoline now for immediate blending so that they may have the finished motor fuel to dispose of this month.

Prolongation of motoring weather has resulted in many refiners finding themselves short of winter-specification gasoline. These are now going into the open market for natural gasoline with which to make up motor fuel needed to take the place of the material already sold as the result of unexpectedly pleasant motoring conditions. Gulf Coast refiners were reported to be especially heavy buyers. In addition to other reasons, it was believed they were actuated by a desire to build up finished motor fuel and get it offshore before more serious delay might result from a marine strike.

The lubricant group was steadier, and belief was expressed that there was no danger of recurrence in the near future of the market demoralization recently experienced as the result of price-cutting. Feeling in the trade is that there will be no advance of prices in the Mid-Continent, now abnormally low, before the year's end.

Early Winter in East Coast States Has Buoyant Effect on Fuel Oil Sales

By H. STANLEY NORMAN

NEW YORK, Dec. 1.—Earlier than normal subfreezing weather in the northeastern Atlantic territory is exerting a buoyant pressure on the entire fuel oil list and most observers expect prices to move forward soon. Slightly higher kerosene and light fuel oil prices were posted by two sellers last week. The heavier fuel oils are particularly strong, but with domestic heating requirements reaching mid-winter proportions this early in the season the lighter grades are in position to advance apace with other grades.

With bunker C fuel oil mostly held at 95 cents per barrel on the Gulf Coast and with some sellers asking 97.5 to 98 cents, observers feel that an advance in northeastern Atlantic ports is inevitable. This view is taken in light of tanker charter markets, which have advanced from 5 to 10 cents per barrel during the past three weeks. The advance on chartering rates is due partially to the seamen's strike, but also reflects the greater demand for boats to move the winter supplies into northern storage. While the export market is not particularly brisk at the moment, cargoes of gas oil and kerosene have been involved in recently closed contracts and prices have been on the top side of price ranges. Inclusion of gas oil and kerosene in the export business, which until two weeks ago was mostly confined to gasoline and lubricating stocks, reflects the seasonal demand for burning materials abroad.

SELF-REGULATION

A move was launched last week in New Jersey to organize the large industries and business in that state and nearby parts of New York and Connecticut for voluntary cooperative self-regulation along lines attempted by NRA. The move was fostered by the State Trade Service Council and was launched among the retail gasoline dealers and jobbers in New Jersey. Insufficient time has elapsed to determine how widely the organization is covering New Jersey gasoline dealers, but was said to include a majority in the more thickly populated districts. It is the council's objective to seek Federal Trade Commission enforcement of code infractions which cannot be amicably adjusted. Among practices condemned in a tentative code were "selling below cost, distribution of premiums, the use of lotteries, games of chance or prizes, inaugurating or causing price wars and receiving rebates." Jobbers and dealers in parts of New Jersey, northern Pennsylvania and parts of New York are complaining of the recent changes in consumer discount rates, which have narrowed the margin materially between tankcar consumer and tank-wagon prices. The jobbers complain that the new narrowed margins make competition for dealer accounts nearly impossible.

In some instances the narrowed consumer tank-wagon margins are exerting pressure on tankcar gasoline prices. Companies or individuals forced by the nature of circumstances to depend on jobbers for their bulk distribution are being compelled to bring down their tankcar prices fractionally in order to protect their jobbers against loss of accounts among independent service stations.

However, the tankcar structure in New York and surrounding territory was holding fairly steady at 6½ cents per gallon for 65 octane gasoline at the end of last week. A reduction of 1 cent per gallon in tank-wagon and service station prices was made by Atlantic Refining Co. in western Pennsylvania a week ago, but the cut seemed confined to that territory. The service station prices in the area reduced is now 18.5 cents per gallon.

GASOLINE PRICES

Retail gasoline prices in parts of Brooklyn and in the Boston districts remain depressed, but elsewhere the previously existing rates are rather uniformly maintained.

Continued heavy consumption of gasoline, reflected by weekly refinery statistics, is playing an important part in keeping gasoline prices in fairly steady position. There has been no reported tendency on the part of refiners to alter their normal cracking operations. There is growing inclination on the part of refiners to maintain normal cracking operations in the hope that winter gasoline consumption will hold its relative gain over last year and thereby absorb in direct proportion the increased production required to fill demand for fuel oil.

Slightly increased prices were being asked by some sellers on tankcars of furnace oil. Sinclair Refining Co. and Hartol Refining Co. launched a move late last week to lift kerosene, No. 1, No. 2 and No. 4 oil a quarter of a cent. Several other suppliers were of the opinion that the general market would be lifted to that extent, but outside of the two making definite postings upward, decisions of the refiners were held under advisement.

Kerosene and No. 1 fuel oil were quoted at ocean terminals by Sinclair at 5 cents and No. 2 oil was raised to 4½ cents per gallon. For No. 4 fuel, Sinclair quoted 4½ cents per gallon at New York, Tiverton and Philadelphia, with 4⅝ cents at Cohoes. Kerosene was posted at 5⅜ cents at Cohoes by Sinclair and No. 2 oil at 4⅞ cents. At Wellsville, kerosene was raised to 5 cents and No. 2 oil to 4½ cents per gallon. The advances ranged from one-fourth to three-eighths of a cent per gallon on the various grades of kerosene and light fuel oils.

Hartol Refining Co. posted substantially the same advances on material it markets in tankcars and at comparable points.

Some sources on the Gulf Coast are asking from one-eighth to one-fourth of a cent per gallon more for kerosene and gas oil, partially prompted by the call for this material in export business during the past two weeks. Several part cargoes of 30 plus, transparent gas oil were reported sold during the past 10 days at 3.5 to 3.625 cents and a cargo of 41-43 water white kerosene brought 4 cents for export movement.

Neutral oils in the Pennsylvania district and likewise on the Gulf Coast are displaying a strong front with a limited volume of material available at either point. There has been a gradual movement into slightly higher ground by neutrals in Gulf Coast sections with the over-all result that prices are now from a half to three-quarters of a cent higher than previously considered general.

MISCELLANEOUS PRODUCTS

Pennsylvania refiners, in most instances, are well sold ahead on neutral oils and blenders are finding it increasingly difficult to fill their requirements in that district. Several refiners are sold up for remainder of the year.

The export movement of bright stocks has been particularly brisk for six weeks and there is a tendency by most refiners to move quotations ahead slightly. At the same time, there is some hesitancy to quote higher for domestic consumption since the heavy call has been for European movement.

Scale and fully refined waxes displayed little action in the past week's market, although some increase in shipments from the Pennsylvania district was reported. In

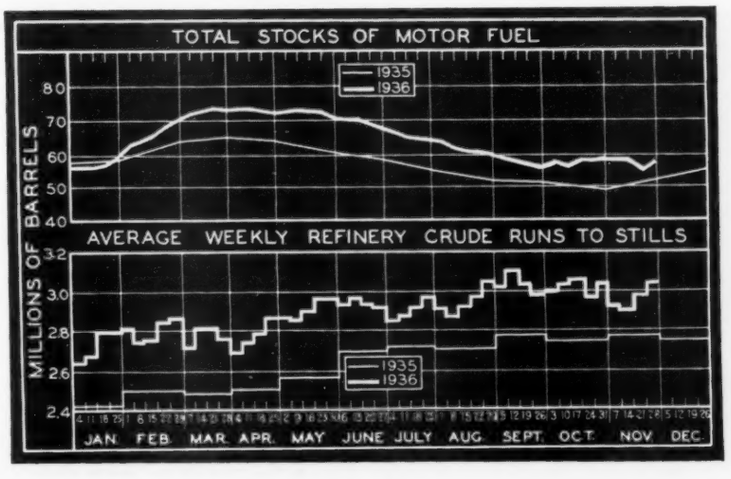
(Continued on Page 100)

A. P. I. Weekly Refinery Statistics

Week Ending November 28, 1936

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	514,000	14,091,000	11,923,000
Appalachian	94.8	110,000	2,158,000	667,000
Indiana, Illinois, Kentucky	96.2	423,000	8,542,000	6,219,000
Oklahoma, Kansas, Missouri	84.8	280,000	5,676,000	3,499,000
Inland Texas	48.5	112,000	1,681,000	1,726,000
Texas Gulf	97.0	642,000	7,407,000	8,714,000
Louisiana Gulf	96.4	117,000	1,436,000	2,175,000
North Louisiana and Arkansas	90.0	57,000	266,000	433,000
Rocky Mountains	61.9	43,000	899,000	784,000
California	92.6	489,000	11,699,000	73,610,000
Total reported	89.9	2,787,000	53,855,000	109,750,000
Estimated unreported	.....	233,000	3,593,000	2,275,000
*Estimated total	.....	3,020,000	57,448,000	112,025,000
*Estimated total previous week	.....	2,995,000	56,670,000	111,762,000
†November 30, 1935	.....	2,772,000	52,046,000	108,847,000

*Bureau of Mines basis, currently estimated. †Monthly report, U. S. Bureau of Mines.



DEPARTMENT OF GEOLOGY
THE UNIVERSITY OF TEXAS

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of December 1, 1936

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank-wagon or 3 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	15.4	13.4	4.0	9.2
Decatur	15.4	13.9	4.0	9.2
Joliet	14.5	13.9	4.0	9.2
Peoria	15.4	13.9	4.0	9.2
Quincy	15.2	13.7	4.0	9.0
Davenport, Ia.	15.4	13.9	4.0	9.2
Des Moines	15.2	13.7	4.0	9.0
Mason City	15.6	14.1	4.0	9.4
Sioux City	15.4	13.9	4.0	9.2
Duluth, Minn.	16.2	14.7	4.0	10.0
Mankato	15.8	14.3	4.0	9.6
Twin Cities	15.8	14.3	4.0	9.6
La Crosse, Wis.	16.8	15.3	5.0	9.6
Green Bay	17.1	15.6	5.0	9.9
Milwaukee	16.7	15.2	5.0	9.5
Detroit, Mich.	14.5	13.0	4.0	8.8
Grand Rapids	15.4	13.9	4.0	9.3
Saginaw	15.6	14.1	4.0	10.1
Evansville, Ind.	16.9	15.4	5.0	†9.7
Indianapolis	17.1	15.6	5.0	†9.0
South Bend	17.3	15.8	5.0	†9.0
Fargo, N. Dak.	16.8	15.3	4.0	10.6
Minot	18.0	16.5	4.0	11.5
Huron, S. Dak.	17.3	15.8	5.0	10.1
Kans. City, Mo.*	14.8	13.3	4.0	8.0
St. Louis*	15.1	13.6	4.0	8.9
St. Joseph*	14.8	13.3	4.0	8.6
Wichita, Kans.	14.3	11.5	4.0	8.0

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not includes 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month, off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective October 5, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.75 cents; 100-119 gallons, 7.75 cents; 150 gallons and over, 7.25 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.75 cents; 150 gallons and over, 6.75 cents. Stanolex furnace oil, 1-149 gallons, 7.75 cents; 150 gallons and over, 6.75 cents. Stanolex A, 1-399 gallons, 6 cents; 400 gallons and over, 5 cents. Stanolex B, 1-799 gallons, 5.5 cents; 800 gallons and over, 4.5 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag
Atl'tic City, N.J.	12.5	....	4.0	9.0
Newark	12.5	....	4.0	7.5
Annapolis, Md.	14.6	....	5.0	10.0
Baltimore	14.0	....	5.0	8.0
Cumberland	16.6	....	5.0	10.0
Wash'g'n, D.C.	12.0	16.5	3.0	9.0
Danville, Va.	17.0	20.7	6.0	12.9
Norfolk	16.0	....	6.0	11.3
Petersburg	16.3	19.8	6.0	11.7
Richmond	16.3	19.8	6.0	11.7
Roanoke	17.5	21.0	6.0	12.9
Charles'n, W. Vt.	15.8	....	5.0	12.6
Parkersburg	15.1	....	5.0	11.2
Wheeling	15.0	....	5.0	12.2
Charlotte, N. C.	18.4	....	7.0	12.6
Hickory	18.9	....	7.0	13.0
Mt. Airy	18.7	....	7.0	12.8
Raleigh	18.0	....	7.0	12.1
Salisbury	18.5	....	7.0	12.7
Charleston, S. C.	17.0	20.5	7.0	11.1
Columbia	18.0	21.5	7.0	12.1
Spartanburg	18.7	22.2	7.0	12.9

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to commercial consumers, effective Nov. 2, 1936: On deliveries of 500 gallons or more by hose connection, consumer tankcar price plus .5 cent; less than 500 gallons, plus .75 cent; not taking deliveries by hose connection, plus 1 cent.

Above schedule does not apply to North and South Carolina, and the greater portions of Virginia and West Virginia where the following is in effect: Up to 35,999 gallons per year, 3.5 cents over tankcar price; 36,000 to 119,999 gallons, 2.0 cents; 120,000 to 239,999 gallons, 1.5 cents; 240,000 to 479,999 gallons, 1.0 cent; over 480,000 gallons, .5 cent. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Atlanta, Ga.	20.5	22.5	7.0	*13.0
Augusta	19.5	....	7.0	*12.5
Macon	20.0	22.0	7.0	*14.0
Savannah	18.5	20.5	7.0	*12.5
Birm'ham, Ala.	21.0	23.0	8.0	12.0
Mobile	19.0	21.0	9.0	11.0
Montgomery	20.5	21.0	9.0	14.0
Jackson, Miss.	20.0	22.0	7.0	*12.5
Vicksburg	19.5	....	7.0	12.5
Jacksonville, Fla.	18.0	20.0	8.0	11.5
Miami	19.5	21.5	8.0	12.5
Pensacola	21.5	23.5	9.0	10.5
Tampa	18.5	20.5	8.0	11.5
Lexington, Ky.	18.0	20.0	6.0	11.0
Covington	17.5	19.5	6.0	10.5
Louisville	18.0	20.0	6.0	10.0
Paducah	16.5	....	6.0	8.0

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Denver, Colo.	19.0	21.0	5.0	11.0
Grand Junction	21.5	23.5	5.0	15.0
Pueblo	19.0	21.0	5.0	10.0
Casper, Wyo.	19.5	21.5	5.0	11.5
Cheyenne	19.5	21.5	5.0	13.0
Butte, Mont.	21.0	23.0	6.0	14.5
Billings	22.5	24.5	6.0	14.5
Helena	22.5	24.5	6.0	14.5
Great Falls	22.5	24.5	6.0	14.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Twin Falls, Ida.	23.0	25.0	6.0	18.0
Boise	22.5	24.5	6.0	18.0
Albu'que, N. M.	19.0	21.0	*6.5	13.0

*Includes one-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price 4 cents except in Montana where a discount of 2 cents off tank-wagon price is allowed; divided dealer accounts 3½ cents.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.0	18.0	4.0	11.5
Los Angeles	16.5	17.5	4.0	9.0
Fresno, Calif.	17.5	18.5	4.0	11.0
Phoenix, Ariz.	20.5	21.5	6.0	†16.0
Reno, Nev.	19.5	20.5	5.0	13.0
Portland, Ore.	19.5	20.5	6.0	13.5
Seattle, Wash.	19.5	20.5	6.0	13.5
Tacoma	19.5	20.5	6.0	13.5
Spokane	22.5	23.5	6.0	16.5

Discounts to dealers: on gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

‡Includes 5-cent state tax.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Post. deal.	Serv. sta.	Inc tax	tank-wag
Albany, N. Y.	12.7	....	4.0	7.75
*Met. N. Y.:				
Manhtn., Bronx	13.7	....	4.0	7.25
Staten Island	13.0	....	4.0	7.25
Qu'ns & Br'klyn	12.7	....	4.0	7.25
Buffalo	13.5	....	4.0	8.25
Rochester	13.5	....	4.0	8.25
Syracuse	13.5	....	4.0	8.75
Boston, Mass.	12.5	....	4.0	7.50
Portland, Me.	14.5	....	5.0	7.75
Manch'ter, N. H.	15.0	....	5.0	8.00
Burlington, Vt.	14.7	....	5.0	8.75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wag. dlr.	Serv. sta.	Inc. tax	tank-wag.
Philadelphia, Pa.	13.5	16.0	5.0	9.5
Pittsburgh	16.0	19.5	5.0	10.0
Allentown	14.0	....	5.0	10.0
Erie	15.0	....	5.0	10.0
Scranton	14.0	....	5.0	10.0
Altoona	16.0	....	5.0	10.0
Dover, Del.	14.0	....	5.0	10.0
Wilmington	13.0	....	5.0	10.0
Springf'd, Mass.	13.0	....	4.0	7.0
Worcester	13.5	....	4.0	7.75
Hartford, Conn.	12.9	....	4.0	7.0
New Haven	12.8	....	4.0	7.5
Providence, R. I.	11.5	....	3.0	7.0

Price basis to undivided dealers—Dealer tank-wagon less .5 cent per gallon.

Consuming accounts not under contract—when made by tank-wagon in quantities of 50 gallons or over, tank-wagon dealer price.

Commercial accounts under contract—annual consumption 2,500 to 100,000 gallons per year, 1 cent above posted tankcar price; over 100,000 gallons per year, .5 cent above posted tankcar price.

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for tankgallon lots if covered by contract.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
N. Orleans, La.	19.5	23.0	*10.0	†11.0
Baton Rouge	17.5	21.0	8.0	11.5
Alexandria	18.0	....	8.0	9.5
Lafayette	18.5	....	8.0	12.5
Lake Charles	18.5	....	8.0	10.0
Shreveport	17.0	....	8.0	10.0
Knoxville, Tenn.	20.5	....	8.0	14.0
Memphis	18.5	22.0	8.0	9.5
Chattanooga	20.0	....	8.0	11.5
Nashville	19.5	....	8.0	10.0
Bristol	19.25	....	8.0	14.0

*Includes 2-cent parish tax. †Includes 1 cent parish tax and 1 cent state tax.

Price basis to commercial consumers: Louisiana, effective Aug. 15, 1935, Contract consumers 2.5 cents above tankcar price less the following discounts on a gallonage basis; 3,001 to 10,000 gallons per month, .5 cent; 10,001 to 20,000, 1.0 cent; 20,001 to 40,000 gallons, 1.5 cents; over 40,000 gallons per month, 2.0 cents. In Tennessee, effective Feb. 11, 1935, commercial consumer at the tankcar price plus the following: Up to 35,999 gallons per year, 2.5 cents; 36,000 to 119,999 gallons, 2.0 cents; 120,000 to 239,999 gallons, 1.5 cents; 240,000 to 479,000 gallons, 1.0 cent; over 480,000 gallons, .5 cent over tankcar.

Louisiana kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Omaha	17.8	19.8	6.0	9.5
McCook	18.5	20.5	6.0	10.2
Norfolk	18.2	20.2	6.0	9.9
North Platte	18.6	20.9	6.0	10.3
Scotts Bluff	19.3	21.3	6.0	11.0

Note—Discounts to dealers: where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank-wagon deliveries covered only by standard commercial consumers contract effective January 1, 1935.

Southwestern District

	Gasoline			Kero
	Tank wag.	Serv. sta.	Inc. tax	tank wag
Dallas, Tex.	15.0	17.0	5.0	7.5
Fort Worth	15.0	17.0	5.0	8.5
Houston	16.0	18.0	5.0	7.5
San Antonio	15.0	17.0	5.0	7.5
El Paso	17.0	19.0	5.0	8.0
Muskogee, Ok.	16.0	18.0	5.0	8.0
Okla. City	16.0	18.0	5.0	8.0
Tulsa	16.0	18.0	5.0	6.0
Ft. Smith, Ark.	16.5	18.5	5.0	8.0
Little Rock	19.0	21.0	7.5	9.0
Texarkana	16.5	18.5	5.0	8.5

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero
	Tank wag.	Serv. sta.	Inc. tax	tank wag.
Ohio points	17.5	(†)	5.0	*13.5

*Includes state tax of 1 cent.

†Following the leasing of service stations to dealers at many points the company no longer posts a statewide service station price.

Canada*

3-Star Imperial Gasoline

IMPERIAL OIL, LTD.

	Gasoline			Kero
	Tank wag.	Serv. sta.	Inc. tax	tank wag.
Hamilton, Ont.	21.0	23.5	6.0	17.0
Toronto, Ont.	21.0	23.5	6.0	17.0
Brandon, Man.	29.8	32.8	7.0	23.8
Winnipeg, Man.	28.2	31.2	7.0	20.1
Regina, Sask.	29.5	32.5	7.0	21.0
Saskatoon, Sask.	32.3	35.3	7.0	24.0
Edmonton, Alta.	30.5	33.5	7.0	24.2
Calgary, Alta.	28.0	31.0	7.0	21.5
Vancouver, B. C.	22.0	26.0	7.0	23.0
Montreal, Que.	18.5	....	6.0	17.5
St. John, N. B.	24.0	28.0	8.0	18.5
Halifax, N. S.	24.0	28.0	8.0	18.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price, undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal.

Retail Price Changes

Standard Oil Co. of New Jersey November 13 converted service stations to dealer basis of operation in Norfolk.

Standard to Raise Prices

Effective Friday, December 4, 1936, Standard Oil Co. (Indiana) will advance subnormal prices to dealers and also tank-wagon markets at approximately 120 points in the southwestern portion of Kansas by amounts varying from one-tenth cent to 2.5 cents per gallon on gasoline, kerosene and tractor fuel.

Rocky Mountain Runs

WYOMING	
Salt Creek	16,340
Big Muddy	1,430
Byron	1,360
Frannie	1,380
Garland	2,250
Grass Creek	1,940
LaBarge	1,080
Lance Creek	5,490
Lost Soldier	1,290
Oregon Basin	3,800
Rock River	1,380
Miscellaneous	4,800
Total Wyoming	42,540
MONTANA	
Cut Bank	11,250
Kevin-Sunburst	4,720
Pondera	1,100
Miscellaneous	920
Total Montana	17,990
COLORADO	
Iles dome	2,220
Moffat	440
Miscellaneous	750
Total Colorado	3,410
NEW MEXICO	
Cooper	7,100
Eunice	23,840
Hobbs	23,320
Jal	3,370
Lea	1,020
Maljamar	2,510
Monument	12,500
Miscellaneous	1,640
Total New Mexico	75,300
Total Rocky Mountain region	139,240

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of December 1, 1936

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below (3d gr.)	.04¾	.04⅞
63-67 octane	.05⅛	.05⅜
68-70 octane (regular)	.05¾	.05⅞
60-62 400 grades:		
62 octane and below (3d gr.)	.04¾	.04⅞
63-67 octane	.05⅛	.05⅜
68-70 octane (regular)	.05¾	.05⅞
64-66 375	.05	.05⅛
68-70 360	.05¼	.05⅜

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅛	.05⅜
68-70 octane (regular)	.05¾	.05⅞
60-62 400	.04¾	.04⅞
64-66 375	.05	.05⅛

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.05½	.05¾
63-67 octane	.06¼	.06½
68-70 octane (regular)	.06½	.06¾

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.05½	.05¾
63-67 octane ..	.06¼	.06½
68-70 octane (regular)	.05½	.06¾

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅛	.05¼
68-70 octane (regular)	.05¾	.05⅞
60-62 400 grades:		
62 octane and below	.04¾	.04⅞
63-67 octane	.05⅛	.05¼
68-70 octane (regular)	.05¾	.05⅞
64-66 375	.05	.05⅛
68-70 360	.05¼	.05⅜

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05½
60-64.9 octane		.07
65-70 octane		.07¼
64-66 375		.05⅜
68-70 350		.06

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07	.08
58-60 400	.07⅜	.08½

EAST COAST (domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)		.06¼
Baltimore		.06¼
U. S. Motor, 60.64.9 octane:		
*New York (Bayonne)		.06½
Philadelphia	.06½	.06⅝
Boston		.06⅝
Baltimore	.06½	.06⅝
Charleston, S. C.		.06⅝
U. S. Motor, 65 and above:		
*New York (Bayonne)		.06⅝
Philadelphia	.06⅜	.07
Boston		.07
Baltimore	.06⅜	.07
Charleston, S. C.		.07

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05½	.05⅝
60-64.9 octane	.05⅞	.06
65 octane and higher	.06	.06¼

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)		.05⅜
52-54 450 (blending)		.05⅜
54-56 450 (blending)		.05½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.04⅝
Grade 18-55	.05⅜	.05⅝
Low vapor pressure grade:		
*14-pound v.p. (max.)	.06¼	.06⅝
*12-pound v.p. (max.)	.06⅝	.06⅞

*Nominal.

NORTH TEXAS—

Grade 26-70		.04⅝
Grade 18-55	.05⅜	.05⅝

CALIFORNIA—

75-85 375-390	.07	.07⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.05	.05⅛

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110 flash, 540-550 e.p.	.03⅝
41-43 gr., 300-350 l.b.p., 110-125 flash, 500-520 e.p.	.03¾
46-48 gr., 210-230 l.b.p., 480 max. e.p.	.04½

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03½	.03⅝
42-44	.03⅝	.03¾

NORTH TEXAS—

41-43	.03½	.03⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.03¾	.04

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04	.04¼

PENNSYLVANIA (inland refineries)—

45	.04¾	.04⅞
46	.04⅞	.05
47	.05	.05⅛

CHICAGO (Based on Group 3)—

41-43	.03½	.03⅝
42-44	.03⅝	.03¾

CALIFORNIA (Pac. Coast market)—

38-40 high burning test	.03½	.05

NEW YORK (Bayonne, N. J.)—

41-43		.04⅝

*GULF COAST (domestic)—

41-43		.03⅞

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03½	.03¾
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03⅜	.03⅝
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.02⅞

NORTH TEXAS—

No. 1 prime white, 38-42	.03½	.03¾
No. 1 straw, 38-40	.03½	.03⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅜	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03½	.03¾
No. 3, 28-32	.03¼	.03½

CHICAGO (Based on Group 3)—

No. 1 prime white, 38-40	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03⅜	.03½
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03¼	.03¼
No. 3, 15 and above, 28-32	.02½	.02¾

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2	.04¼	.04⅜
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low cold test, 24-28	.95	1.05
No. 4, 15 and above, 24-28	.80	.85
No. 5, low cold test, 18-22	.72½	.80
Below 18 fuel oil, industrial	.70	.75

NORTH TEXAS—

U.G.I. gas oil	.02½	.02⅝
No. 4, low cold test, 24-28	.95	1.00
No. 5, low cold test, 18-22	.72½	.80
Below 18 fuel oil, industrial	.65	.75

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U.G.I. gas oil	.02⅝	.02¾
10-14 fuel oil, industrial	.70	.75

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.60	.65

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02½	.02⅝
No. 4, low cold test, 24-28	.95	1.00
No. 4, 15 and above, 24-28	.80	.82½
No. 5, low cold test, 18-22	.75	.80
No. 6, low cold test, 10-16	.65	.70

PENNSYLVANIA (inland refineries)—

36-40	.04½	.04⅝

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	.95	1.15
24 plus diesel	1.00	1.25
24 plus diesel (bunkers)	1.05	1.30
12-16 (bunkers at tidewater)	.85	.95
10-16 (cargo lots)	.75	.95
12-17 (tankcars)	.70	.95
San Joaquin Valley:		
10-18 (tankcars)	.70	.75
San Francisco:		
27 plus diesel		1.35
24 plus diesel (bunkers)		1.35
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03½	.03⅝
28-30 diesel (bunkers)		1.50
Bunkers (bulk cargoes)		.95
Bunker C (bunkers)		.95

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04½
28-30 diesel (lighterage 6¼ per bbl.)		1.65
28-30 diesel (tankcars)	.04¼	.04½
*Bunker C (to ocean-going ships in N. Y. harbor)		1.15
Industrial fuel (tankcars)		.03¾

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.20
150-160 D, 0-10		.17
150-160 D, 15-25		.16½
150-160 E, 15-25		.16
100-110 D, 0-10		.15½
Steam refined:		
631 green (treated)		.13
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania grade No. 8 color, 145-50 at 510; 540-550 flash):		
10 pour test	.24	.24½
15 pour test	.23	.23½
20 pour test	.22	.22½
25 pour test	.21	.21½
Steam refined:		
600	.13	.13½
650	.14	.14½
600 Pennsylvania flash	.15	.15½
630 flash	.17	.17½
600 Warren E filtered	.16	.16½

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.08½
180-3		.09½
180-4		.09
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½
300-3½		.12½
400-3½		.13½
100-2½ paraffin oil		.05⅝
15-20 Cold Test:		
200-3		.09½
200-4		.09
250-3		.10½
250-4		.10
280-3		.11½
280-4		.11

GULF COAST—

Pale Oils:		
200-3	.06½	.07
300-3	.07	.07½
500-3½	.08	.08½
750-3½	.08½	.09
1,200-3½	.09¼	.09½
2,000-4	.09½	.10
Red Oils:		
200-5-6	.06¾	.07
300-5-6	.07	.07½
500-5-6	.08	.08½
750	.08½	.09
1,200-5-6	.09	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3		.06
200-2½-3		.06¼
300-3-3½		.06½
400-3-4	.08½	.09¼
450-3-4	.09¾	.10
550-3-4	.10	.10¼
600-3-4	.10¼	.10½
Red Oils:		
200-4-5		.06
300-5-6		.06¼
350-5-6	.07	.08
400-5-6	.08	.08¼
450-5-6	.08¼	.08½
500-5-6	.08½	.09
600-5-6½	.09	.09½
700-6½ plus	.09¾	.10
750-6½ plus	.10	.10¼
900-6½ plus	.10¼	.10½

PENNSYLVANIA—

150 vis. at 750° F. color, 400-405 flash:		
Zero pour test	.21½	.22
10 pour test	.20½	.21
15 pour test	.20	.20½
25 pour test	.19	.19½
180 vis. at 70° F., 3 color:		
25 pour test	.21½	.22
200 vis. at 70° F., 3 color:		
Zero pour test	.25	.25½
10 pour test	.24	.24½
15 pour test	.23½	.24
25 pour test	.22½	.23

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02½	.02⅝

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0245	.0250
124-126 (a.m.p.) w.c. scale	.0250	.0255

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0240	.0250
124-126 (a.m.p.) y.s.	.0240	.0245
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05¼
60-62 400		.05⅝
61-63 390	.05⅜	.05½
64-66 375		.05⅝

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04¾
55-65 octane	.04¾	.05
65-67 octane		.05
67-69 octane		.05¼
Above 69 octane	.05½	.06

KEROSENE

GULF COAST—

41-43 prime white		.03⅝
41-43 water white		.03¾
44 water white		.04½

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:	
600 Warren E	.22
600 S.R. unfiltered	.20
650 S.R. unfiltered	.19¾
600 flash S.R.	.22
630 flash S.R.	.23½
Bright Stocks:	
8 color	.28
6½ plus color in dilution	.27

NEUTRAL OIL

200-3 color	.27½
150-3 color	.24

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0245	.0250

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 9, 1936)

East Texas*	$1.15
Van, Tex.†	1.02
Talco (Nov. 1, 1936)	.65
Altus and Tipton, Okla.‡	1.08
Other fields (see gravity table).	

*All companies. †Pure Oil Co. ‡Gulf Oil Corp. Talco by Humble Oil & Refining Co.

West Texas

Crane, Upton, Howard, Glasscock and Mitchell counties	$ .80
Winkler County	.85
Lea County, N. Mex.	.85
Pecos County*	.85
Pecos shallow†	.75

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Note—For Humble, Magnolia and Texas Co.'s West Texas and Lea County prices see gravity table. Above prices are those of other buyers.

Rocky Mountain States

(Effective January 9, 1936)

Iles, Colo., light*	$1.06
Iles, Colo., heavy*	1.00
Greybull, Wyo.*	1.28
Torchlight, Wyo.*	1.28
Grass Creek, Wyo., light*†	1.18
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Nov. 4, 1936)*	.57
Elk Basin, Wyo., light *†	1.18
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light (Nov. 4, 1936)	.70
Hogback, N. Mex.*	1.21
Pondera, Mont. (Jan. 26, 1936)*	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.11
Rock Creek, Wyo. (Nov. 1, 1936)†	1.08½
Artesia, N. Mex. (Jan. 9, 1936)‡	.80
Maljamar, N. Mex. (Jan. 9, 1936)‡	.80
Fort Collins and Wellington, Colo. (Jan. 9, 1936)‡	See Note
Florence, Colo.	.98
Lance Creek, Wyo.	.85
Lost Soldier, Wyo. (Sept. 30, 1933)	.88
Hudson, Wyo. (June 2, 1931)	.65
Sunburst, Mont. (June 5, 1936)	1.15
Cat Creek, Mont.	1.28
Cut Bank, Mont.	1.35

Note—Fort Collins and Wellington are not posted, price 5 cents under quotation of Salt Creek crude of like gravity (Fort Collins 36°; Wellington 33°). *Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Southwest Texas

(January 9, 1936)

Saxet (Nov. 1, 1936)	.95
Mirando (Nov. 1, 1936)	.90
Pettus	1.25
Taft (Nov. 1, 1936)	.95
Salt Flat*	.97
Salt Flat‡	.97
Darst Creek*	.97
Darst Creek†	.97
Luling	.90
Lytton Springs	1.00
Duval County	.85
Flour Bluff (Nov. 1, 1936). See gravity table	

*Humble Oil & Refining Co. †Magnolia Petroleum Co., Gulf Pipe Line Co. and Texas Co. ‡Shell Petroleum Corp. Saxet posted by Humble and Texas; Mirando by Humble and Magnolia; Pettus by Humble; Salt Flat by Humble; Luling and Lytton Springs by Magnolia; Duval by Texas Co.

Gulf Coast

(January 9, 1936)

Cleveland, Tex.	$1.10
Hardin, Tex.	1.03
Greta, Tex. (Nov. 1, 1936)	.95
Refugio, Tex., heavy (Nov. 1, 1936)	.95
Tomball, Tex.	1.30
Lafitte, La.	1.12
Livingston, Tex.	1.15
Bosco, La. (Jan. 16, 1936)	1.05
Evangeline, La.	1.07
O'Connor (Nov. 1, 1936)	.95
McFaddin (Nov. 1, 1936)	.95
Satsuma (Nov. 1, 1936)	1.15
Heyser, light (Nov. 1, 1936)	1.15
Heyser, heavy (Nov. 1, 1936)	.90
Placedo (Nov. 1, 1936)	.90
Plymouth (Nov. 1, 1936)	
...See gravity table for Gulf Coast pools	
Welsh, La.	.96

Middle Western States

OHIO OIL CO.

Lima (Sept. 22, 1936)	$1.15
Illinois (Jan. 9, 1936)	1.23
Princeton, Ind. (Jan. 9, 1936)*	1.23
Midland, Mich. (Sept. 16, 1936)*	1.32
Midland, Mich. (Sept. 28, 1936)†	1.37
West Branch, Mich. (Sept. 16, 1936)	1.16
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River (Jan. 9, 1936)	1.30
Kentucky River (Jan. 9, 1936)	1.38
Western Kentucky (Nov. 1, 1936)	1.28

*Posted by Simrall Corp. and Pure Oil Co. and includes Greendale, Porter, Beaverton and Crystal crudes. West Branch, Mich., by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. †Old Dutch Refining Co.

North Louisiana and Arkansas

Smackover, all grades (Jan. 10, 1936)*	$.75
Smackover, all grades (Jan. 9, 1936)†	.80
Tullos and Urania (Jan. 10, 1936)	.97
Nevada, Ark. (Jan. 10, 1936)	.65
El Dorado East field (Jan. 16, 1936)	.75
Converse, Holly, Pleasant Hill and Zwolle (Jan. 10, 1936)*	1.10
Lisbon, Ark. (Jan. 10, 1936)*	1.10
Elm Grove, La. (Jan. 10, 1936)	.80

*Standard Oil Co. of Louisiana, Gulf Refining Co., Louisiana Oil Refining Co., Texas Co. (effective January 14) and Magnolia Petroleum Co. (effective January 16). Urania by H. L. Hunt Co. and Louisiana Oil Refining Co. Nevada by Standard of Louisiana. El Dorado East field by Magnolia Petroleum Co. Phillips Petroleum Co. (effective January 17), posts 75 cents for all grades in Union and Ouachita counties, Arkansas.

Eastern States

TIDE WATER PIPE LINE CO.

(Effective Jan. 13, 1936)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.

(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.45
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.17
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.12
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.97
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936)	1.32

PENNZOIL CO.

(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	2.43
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.41
Includes Tidioute district.	
Group C	2.40
Includes Turkey and Tidioute districts.	
Group D	2.39
Includes Bear Creek and Porkey districts.	
Group E	2.36
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	
Price depends on lengths of pipe line haul to plant at Oil City.	

PURE OIL CO.

(Effective Jan. 13, 1936)

Cabin Creek, W. Va.	$2.12
Bradford Hollow, W. Va.	2.12
Kelly Creek, W. Va.	2.12

Canada

Ontario (Sept. 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (Feb. 3, 1936):†	
Clean naphtha	2.70
Discolored naphtha	2.46
Crude oil, 50 gravity	2.32
Crude oil, 45 to 49.9	2.12
Crude oil, 40 to 44.9	1.55

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$.895

*F.o.b. ship, based on October transactions and exclusive of production and export taxes and bar dues.

New York Market

(Continued from Page 97)

the New York market, prices were unchanged and business was reported "quiet." There is no inclination on the part of refiners in position to supply wax to cut present quoted spot prices and a bulk of them are unwilling to quote over 30 or 45 days.

Crude Prices by Gravities

Gravity—	Oklahoma, Kansas and Salt Creek, Wyo.	Central and North Texas	East Central Texas	North Louisiana, Arkansas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Conroe, Texas	West Texas and Lea County, New Mexico	Gulf Coast, Texas and Louisiana	Flour Bluff, Turtle Bay Anahuac Dickinson, Texas	Iowa and Cameron Meadows, Texas
Below 20	....	....	....	....	....	....	....	....	$.92	....	$.82
20-20.9	....	....	....	....	....	....	....	....	.94	....	.84
21-21.9	....	....	....	....	....	....	....	....	.96	....	.86
22-22.9	....	....	....	....	....	....	....	....	.98	....	.88
23-23.9	....	....	....	....	....	....	....	....	1.00	....	.90
24-24.9	....	....	....	....	....	....	....	....	1.02	....	.92
Below 25	$.86	....	....	$.78	....	....	....	....	....	....	....
25-25.9	.88	....	....	.80	....	....	....	....	1.04	....	.94
26-26.9	.90	....	....	.82	....	....	....	....	1.06	....	.96
27-27.9	.92	....	....	.84	....	....	....	....	1.08	....	.98
28-28.9	.94	....	....	.86	....	....	....	....	1.10	....	1.00
Below 29	.94	$.84	$.91	....	....	....	....	$.75	....	....	....
29-29.9	.96	.86	.93	.88	....	....	....	.76	1.12	....	1.02
30-30.9	.98	.88	.95	.90	....	....	....	.78	1.14	$1.04	1.04
31-31.9	1.00	.90	.97	.92	....	....	....	.80	1.16	1.06	1.06
32-32.9	1.02	.92	.99	.94	....	....	....	.82	1.18	1.08	1.08
33-33.9	1.04	.94	1.01	.96	....	....	....	.84	1.20	1.10	1.10
34-34.9	1.06	.96	1.03	.98	....	....	....	.86	1.22	1.12	1.12
Below 35	....	....	....	....	$.86	$.81	....	....	....	....	....
35-35.9	1.03	.98	1.05	1.00	.88	.83	$1.24	.88	1.22	1.14	1.13
36-36.9	1.10	1.00	1.07	1.02	.90	.85	1.26	.90	1.22	1.16	1.12
37-37.9	1.12	1.02	1.09	1.04	.92	.87	1.28	.90	1.22	1.18	1.12
38-38.9	1.14	1.04	1.11	1.06	.94	.89	1.30	.90	1.22	1.20	1.12
39-39.9	1.16	1.06	1.13	1.08	.96	.91	1.32	.90	1.22	1.22	1.12
40 and over	1.18	1.08	1.15	1.10	.98	.93	1.34	.90	1.22	1.24	1.12

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Oreutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	....	....	....	$.80	$.76	$.76	$.77	$.78	....	....	$.70	$.70	$.70	....	....	$.70	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.70	.70	.70	....	....	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$.70	.74	.74	.71	$.70	....	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.92	.77	.80	....	.70	.78	.78	.72	.70	....	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	....	....	....	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	....	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	....	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	....	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	....	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	....	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	1.01	.98	.90	.83	....	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	1.06	1.02	....	....	....	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	1.10	1.06	....	....	....	.95	....
28-28.9	1.14	1.10	.90	1.14	1.15	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	1.15	1.10	....	....	....	.97	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	1.20	1.14	....	....	....	.99	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	1.25	1.18	....	....	....	1.01	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.22	.97	Ship	....	....	....	1.11	1.21	1.13	1.09	1.29	....	....	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.34	....	....	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.38	....	....	....	$1.19	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	1.23	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.35	....	....	....	1.26	....	1.29	....	....	....	....	....	1.27	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	1.31	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	1.35	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	1.39	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	1.43	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over.

NEW OR IMPROVED EQUIPMENT

Important Features Embodied in New H. C. Smith Rock Bit

The new H. C. Smith rock bit incorporates new features in construction. The two-gauge cutters have conventional roller bearings in addition to two thrust ball bearings. This eliminates play in

the cutters, which might result in the formation forcing the cutters inward, causing a loss of gauge in hole.

A deep and properly shaped tooth insures a maximum amount of diamond substitute metal besides the ultimate in the hardness of the metal itself.

The cross roller assembly is made of a special alloy steel, pin heat treated and greatly increased in size over the conventional cross pin, to eliminate danger of breakage.

The illustration shows the model BR (barrel roller type), one of the successful designs used in the H. C. Smith rental service for California. Shape of cutters insures a maximum clearance for circulation wash, with a tooth proportion equal to the area of the hole being cut.

A full line of rock bits is carried for soft, medium and hard formations. The different formations encountered in the various fields tend to decrease the efficiency of any one type of cutter tooth. With this in mind, Smith engineers have evolved several types of cutter tooth edges, designed particularly to allow easy penetration and fast cutting by the bit. Characteristics of this bit are its smoothness in operation and ability to dig straight holes.

Bulletins, Booklets and Other Literature for the Trade

A condensed catalog of Beaver pipe tools is ready for distribution by Beaver Pipe Tools, Inc., Warren, Ohio. It includes the company's new 60-R ratchet.

The Bradford Motor Works, Bradford, Pa., manufacturer of oil-well supplies, has issued a new catalog sheet, pertaining to its B-M-W Admore insert pump anchor.

Roots-Connersville Blower Corp., Connersville, Ind., has issued Bulletin 260-B11B, descriptive of its line of type T turbine pumps, which have been improved to give increased durability and higher performance.

Bulletin No. 163, announced by the Oil Well Supply Co., Dallas, Tex., is descriptive of the "Oilwell" No. 200 crownblock. It contains two shop views, an outline of advantages and outstanding features, description of construction, instructions for erecting the block, a list of specifications, reeving diagram, assembly drawing and parts list.

The Timken Steel & Tube Co., Canton, Ohio, has prepared an eight-page booklet presenting additional information on the Sicromo 1, 2, 3 and 5 steels recently announced. The booklet gives the analyses of these new steels and discusses the effect of both silicon and chromium on the oxidation resistance of steels in which they are used.

The new line of simplified Smootharc welders, developed by the Harnischfeger Corp. of Milwaukee, Wis., is described in bulletin W-8 just released.

An eight-page bulletin illustrating and describing the improved Mixflo centrifugal pump has been issued by the Worthington Pump & Machinry Corp., Harrison, N. J.

"Valves for Air-Operated Controllers," a 28-page illustrated bulletin offered by the Foxboro Co., Foxboro, Mass., reviews controlled valves of both the throttling and quick-acting "open-and-shut" type, as well as modern controller accessories for extending the practical application of automatic control.

Lee B. Mettler Dead

Lee B. Mettler, head of the Lee B. Mettler Co., combustion engineering, Los Angeles, Calif., died November 13. Mr. Mettler, who was born in Adrian, Mich., in 1874, had been long associated with the gas industry, and for the last 15 years had been in business for himself, manufacturing the Mettler entrained combustion gas burners. A statement from the company's office says there will be no change in its policies and that improvements which had been under way before Mr. Mettler's death will be carried out without interruption.

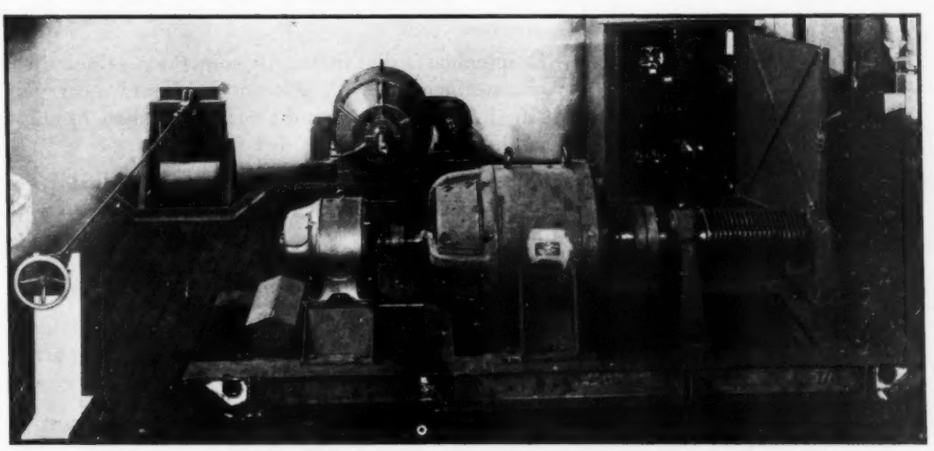
John Chapman Made Director of Equipment Association

JOHN A. CHAPMAN

At the recent meeting of the American Petroleum Equipment Suppliers Association in Chicago the directors were reelected. F. E. Barnsen, president of the Lucey Products Corp., resigned, and the vacany was filled by the appointment of John A. Chapman, assistant general manager of the Lucey organization.

MECHANICAL-ELECTRICAL DRILL RIG FOR THE OIL FIELDS

Allis-Chalmers Manufacturing Co., of Milwaukee, Wis., manufacturer of electrical and transmission machinery for drill rigs used in the oil fields, has announced a new combination mechanical-electrical drilling rig, known as the EM rig. Although all the company's drill rigs utilize various makes of diesel engines, the methods differ. In the all-mechanical driven rig both the drawworks and the slushpumps are driven directly from diesel engines through texrope V-belt drives. In the all-electric rig the two or more diesel engines are connected through texrope drives to generators which furnish direct current to a drawworks motor and to slushpump motors. In the newly offered combination EM oil-well drilling rig the drawworks motor is again driven by power produced by a diesel-engine texrope-driven generator, but the slushpumps are mechanically driven directly by the same diesel engines through texrope drives. This method, with the pumps mechanically driven, eliminates the need for a pump motor as well as one of the two generators usually employed.



Texas Panhandle Completions

Gray County

Champlin Oil & Refining Co. No. 13 McLaughlin, 3,015 feet, plugged back to 3,002 feet, 188 bbls. on pump. Dyck Oil Co. No. 13 McConnell, 3,177-3,282 feet, 663 bbls. on pump. King Oil Co. No. 3 Sailor, 3,180-3,245 feet, shot, 582 bbls. on pump.

Hutchinson County

Cox and others No. 1 French, dry and abandoned 3,227 feet, elevation 3,221 feet. Phillips Petroleum Co. No. 3 Moore-Timms, 3,000-91 feet, shot, 612 bbls. on pump. Timms-Robinson Oil Corp. No. 4 Moore, 3,055-3,128 feet, shot, 465 bbls. on pump.

Carson County

Empire Gas & Fuel Co. No. 2-A Simms, dry and abandoned 3,660 feet, elevation 3,428 feet.

Moore County

Shamrock Oil & Gas Co. No. 1-B Jones, 2,861-3,493 feet, plugged back to 3,358 feet, 55,835,000 feet gas; No. 1 Sneed, 2,425-3,250 feet, 33,485,000 feet gas; No. 1 Thompson, 2,745-3,397 feet, 36,-189,000 feet gas.

Wheeler County

Continental Oil Co. No. 2 Stewart, 2,078-86 feet, 347 bbls. on pump.

Potter County

Canadian River Gas Co. No. 18-A Bivens, 2,370-2,720 feet, 17,720,000 feet gas.

Oil Man's Calendar

December

6-11—New York, National Exposition of Chemical Industries, Grand Central Palace.

8-10—Omaha, Neb., Nebraska Petroleum Marketers, annual convention, Paxton Hotel.

15—Tulsa, annual meeting directors, Mid-Continent Oil and Gas Association.

January

11-15—Detroit, Mich., Society of Automotive Engineers, Book-Cadillac Hotel.

12—New York, Mining and Metallurgical Society of America.

16-24—Detroit, Mich., first International Consumers Petroleum Exposition.

18-19—Bismark, N. D., Northwest Petroleum Association, North Dakota Division, Patterson Hotel.

21-22—Minneapolis, Minn., Northwest Petroleum Association, Minnesota Division, West Hotel.

February, 1937

8-10—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel.

23-25—Milwaukee, Annual Convention, Wisconsin Petroleum Association.

23-25—Columbus, Ohio, Ohio Petroleum Marketers Association, annual convention and Trade Exposition, Hotel Deshler-Wallick.

Memphis, Tenn., Southwest Sales Conference, Natural Gas Department.

March

1-5—Chicago, American Society for Testing Materials, regional meeting and committee week, Palmer House.

17-19—Los Angeles, Calif., A.A.P.G. annual meeting.

April

7-9—Birmingham, Ala., American Institute of Mining and Metallurgical Engineers, Open Hearth Conference.

15-16—Cleveland, Ohio, 34th semiannual meeting National Petroleum Association, Cleveland Hotel.

CLASSIFIED ADVERTISING

Royalties—Production

Brokers—Salesmen

Sell in the most active area in the United States — The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Securities and Exchange Commission. Inquiries invited.

B. D. BUCKLEY

Paul Brown Bldg., St. Louis, Mo.

VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
W. R. Brown & Co., Inc.
14 Prospect Pl., East Orange, N. J.

WILL buy producing and non-producing royalties where wells are drilling. Give full particulars first letter. Information confidential. Box 2152, Wichita, Kansas.

FOR SALE—6½ royalty acres HUMBLE—R. M. MEANS, Andrews County, Texas. $250 per acre for quick sale. Address Box H-534, The Oil and Gas Journal, Tulsa, Oklahoma.

SOUTHWEST & GULF COAST TEXAS
Producing and non-Producing Royalties
Drilling Blocks — Leases
Wholesale . . . Retail
JOHN L. TOMPKINS & COMPANY
CORPUS CHRISTI, TEXAS

FOR SALE—ROYALTY IN LEA and ROOSEVELT COUNTIES, N. MEX. under major oil company leases.. J. W. WALLRICH, Lovington, New Mexico.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Oklahoma.

Royalties—Production

OKLAHOMA CITY AND FITTS
Royalties Quoted Dealers.
W. E. COOK
Perrine Bldg., Oklahoma City, Okla.

FOR SALE: 500 units Larkins-Warr Trust $5; 300 Oklahoma County Trust $4; 30 Washington Carey Trust $32; 10 Second Larkins-Warr Trust $45; and 20 Second Carey Trust $62. Address Box H-540, The Oil and Gas Journal, Tulsa, Oklahoma.

ROYALTIES PURCHASING TRUST, LTD., Moorgate Hall, Moorgate, London, E. C. 2., England, are buyers of prod. oil royalties.

WANT large producing royalty shallow less than three thousand feet. G. D. Miller, Tishomingo, Oklahoma.

Royalties—Production

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

F. A. SANSOME
Maintains a Complete Trading Organization for Brokers, Banks and Dealers
In
Oil Royalties
522 Fifth Avenue, New York, N. Y.

PRODUCING OIL ROYALTIES
for dealers
H. P. BOWEN
842 Kennedy Bldg., Tulsa, Okla.

Royalties—Production

Carey Trust
Second Carey Trust
Larkins-Warr Trust
Oklahoma Carey Trust
Oklahoma County Trust
Southwest Investment Trust
Washington Carey Trust
Provident Trust
Hendrick Ranch Royalties
Missouri-Kansas Pipe Line Par $5
Cosden Oil 6s 1938
Richfield Oil Preferred
Cimarron Trust

BOUGHT — SOLD — QUOTED

We deal in royalties, working interests and all unlisted oil securities. Inquiries invited.

HENRY KEMP & CO.
Telephone WOrth 2-3310
Bell System Teletype N.Y. 1-1733
111 Broadway New York

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
214 Kennedy Bldg., Tulsa, Okla.

OIL ROYALTIES FOR SALE
Royalties in Wayne, Richland, Marion and Jasper counties, Illinois. Call or write HEYDE and McCORMACK, P. O. Box 448, 321 N. Boone St., Olney, Illinois.

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

WANT TO BUY—Producing properties and royalties in Texas or Oklahoma, large or small. Submit complete details for all cash and quick action. P. O. Box 116, San Antonio, Texas.

WANT PARTY to drill oil or gas well for us on PERMITS up to 4,000 acres, percentage basis or may sell oil rights in Baker-Glendive Anticline. Drilling test October 1936 PROVES Anticline Largest oil field in U. S. J. P. Blichfeldt, Mgr., 253 Plymouth Bldg., Minneapolis, Minnesota.

DOMINANCE!

Dominance is that intangible something gained through superior performance. Year in and year out we carry more Classified Advertising than the combined totals of all other trade publications devoted to this field.

This can best be accounted for through RESULTS obtained for the users of this service. Many of the advertisers now appearing on these pages have used this service consistently over a period of years—this is positive proof that Classified Advertising in The Oil and Gas Journal really gets results.

If you buy or sell used equipment, oil properties, or have a service used in the oil business, place the Journal on your payroll—it will prove itself the most efficient and least expensive salesman you have ever employed.

Classified Department
THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

GASOLINE PLANT EQUIPMENT

We are now dismantling two gasoline plants containing good used gasoline plant equipment:

Type 2500 complete Southwestern distillation unit
2—80 H.P. Collins portable water tube boilers
2—100 H.P. Reeves gas engines
2—225 H.P. Watts-Miller twin gas driven compressors
1—80 H.P. Bessemer gas driven compressor
2—80 H.P. Clark gas driven compressors
10—Sectional corrugated structural steel iron buildings from size 8′ x 8′ x 8′ to 30′ x 60′ x 22′.

Pumps, tanks, absorbers, Braun heat exchangers, Westcott meters, pipe, valves, fittings, etc. etc. etc.

Phone— Wire— Write—

BROWN-STRAUSS CORPORATION

Main Office—1446 Guinotte—Kansas City, Mo.

Branches:

Arkansas City, Kansas Sapulpa, Oklahoma Pyote, Texas

Steel Storage Tanks

50—Practically new 80,000-bbl. steel roof tanks, latest type.

125—55,000-bbl. storage tanks at great saving. Prices quoted on request for tanks standing, cut down, or reerected on your grade. Have all other sizes available. All tanks strictly guaranteed.

All kinds refinery equipment, valves, fittings, machinery, pumps and pump repair parts.

Wire—Phone—Write—W. C. Berry

SONKEN-GALAMBA CORPORATION

64 North Second St. Kansas City, Kansas.

FOR SALE: 1—30 x 36 x 10′ and 1—36 x 48 x 10′ Braden Sectional Steel Building now erected near Barnsdall and Hominy, Oklahoma. I. T. I. O. Company, Bartlesville, Oklahoma.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor, Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

FOR SALE: 700 Byron Jackson 3½" x18" used regular anti-friction tool joints API thread. Located at Oklahoma City, Oklahoma, with or without dutchmen. Bargain. I. T. I. O., Bartlesville, Okla.

FOR SALE: 1—Type 10 Lee C. Moore Champion Spudder and Cleaning out machine and 1—Allis-Chalmers Tractor to operate. I. T. I. O. Company, Bartlesville, Oklahoma.

2—300 Ampere Lincoln Welders, speed control, A-1 condition. Service Co., 3732 Cedar Avenue, Cleveland, Ohio.

FOR SALE—6 only 25-30 Ton Martin Special 8 wheel high speed, flexible wagon, bronze bearing equipped with 36" diameter wood wheels ¾x8" steel tired, equipped with hitch for use with crawler type tractor. I. T. I. O., Bartlesville, Oklahoma.

DISMANTLING REFINERY

Cont. Oil Co., Florence, Colo.
Send us your inquiries.

Special prices on Pipe, Valves, Fittings—Merco Nordstrom Valves.

Write to

Box H-541, The Oil and Gas Journal
Tulsa, Oklahoma.

SEVERAL USED ROTARY RIGS
Spudders and Drilling Machines.
Several Steel Derricks & Rotary Equip.
J. S. Daniel, Beacon Bldg., Tulsa

FOR SALE—1 No. 2-A National all steel pulling machine. Drilled 3 shallow wells. I. T. I. O. Company, Bartlesville, Oklahoma.

Equipment Wanted

WANTED—Tractor type drilling machine and standard tools capable of drilling 2,500 feet. Must be in good shape and priced reasonable. Milton M. Mershon, 714 So. College, Tulsa, Okla.

Leases—Production

SHELBY County at last has a producing well. Several tests now going down. This County has been worked out and approved by best geologists. Have 1,000 acres on structure for drilling contract. Small bonus. C. A. Parker, Box 451, Center, Texas.

CORE DRILLING
Any nature — Anywhere
Latest equipment
Will take interest deal with reliable Independent Operator.
PAUL R. KING
Box 341, Hutchinson, Kans.

Shallow Oil-Gas eastern Kansas 700 to 900 feet; six producing zones; proven area. Will furnish lease and drill well. $1,500. Full particulars to brokers, others. Mr. Budd, Osawatomie, Kansas.

10,000 acres fairly solidly blocked MISSISSIPPI on real structure and 3500 ft. well for $12,000. Real operators only. 825 Tennessee Hotel, Memphis, Tenn.

GEOPHYSICAL (oil finding) Surveys, $50 cash. Geological Scientific Service Co., 957 E. Davis, Ft. Worth, Tex.

Leases—Production

ROYALTY, leases, 4,000 acres Brooks County, Texas, west of Alta Verde field, active territory. D. N. Clark, Albia, Iowa.

NEW MEXICO LEASES on the Vegas Dome at Las Vegas, N. M. A deep test on a fully geologized structure. It's a real well testing for the big deep production. It offers a real opportunity to the lease buyer. Prices on structural acreage are reasonable. Now is the time to connect. Write or wire,
S. W. Pressey, Pueblo, Colorado.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

FOR SALE oil and gas leases in Kentucky shallow oil field. Leases furnished for drilling contracts. W. P. Harley, Bowling Green, Kentucky.

Capital to further develop 10,000 acres, oil & gas in middle Tenn. D. H. Reavis, 2014 Beech Ave., Nashville, Tennessee.

BUY—SELL
Proven Leases in Louisiana-Arkansas
WILLIAM MONROE LAYTON
40 Wall St., Suite 1437, New York City
323 Commercial National Bank Bldg.,
Shreveport, La.

LANDS Leases, Royalties, anywhere bought, sold. Lands, $2 acre, up. Leases 25c acre, up. Advise needs. American Investment Co., Houston, Texas.

Opportunities—Enter—Pawnee County, central and Mid-Western Kansas oil development. Commercial or drilling acreage, or protection leases, may be arranged for,—worthy of consideration for responsible, reliable operators or large concerns. Favorable trends being proven for oil possibilities by production in new areas. Also (Shallow) areas, semi-proven to partially producing for drilling or developing. Advise your requirements fully. Address Box H-551, The Oil and Gas Journal, Tulsa, Oklahoma.

Leases—Production

I own 3,000 acres free in N. Pittsburgh & Atoka Cos. 40 to 1,000 A. tracts, no trades. Cash sale, lease or royalty, $5 to $25 per A. Townsite on 2 R.RS. near production. J. E. Cavanagh, Baker, Ore.

MAKE OFFER
Woodson Co., Kans. Between Rosedome & Silver City. Test well 1,600′ and 60′ past second break with no sulphur water. Structure running 35′ to 50′ high to all tests adjoining. 3 chances for big deep production. Logs show in adjoining tests 40′ to 65′ of perfect sand on top of granite. Make offer on direct offset acreage or well.

FRANK MOSSMAN
1715 N. Kansas Ave. Phone 3-1487
Topeka, Kans.

For lease or will trade 75 acre. Okla. County, Okla. Northeast of state capitol N-NE-SE-NE 34-14N-1W. Address Robert C. Lee, 6351 Woodrow St., Detroit, Michigan.

FOR Profits, investigate, cheap leases Red River and other counties. Paper Shell Pecans 24c lb. E. M. Adams, Clarksville, Texas.

WILL block 10,000 acres or more ARKANSAS or MISSISSIPPI. 5c acre for parties able to drill. 35 yrs. experience oil business, capable all phases. Surveys, plats, maps, drilling and formations watched. Reliable, references. 3,500 ft. wells test 4 likely oil sands approx. $12,000. Letters invited from actual operators aware possibilities Upper Mississippi Embayment, Geologist. Box 303, Memphis, Tenn.

Crude Oil Production

DO YOU seek an outlet FOR CRUDE OIL? Wire or write Cargo Oil Exports, Ltd., Chrysler Building, New York City.

Incorporations

DELAWARE CHARTERS: Complete incorporating and organizing service $35. Submitted forms, Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception."
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

Professional Services

APPRAISALS: Estimation of Reserves; Consultations on Gas-Lift Designs, Installations and Operations. S. F. Shaw, 301 Terrell Rd., San Antonio, Tex.

Business Opportunities

GEOLOGIST desires connection on percentage basis plus expenses. Highest credentials. Address Box G-823, The Oil and Gas Journal, 415 Lexington Avenue, New York City.

Ranches and Farm Lands

Cheap cattle ranch. Big lake, 560 acres. $2,800 CASH. Best grass and water in East Colorado. J. Brown, Florence, Colorado.

Mailing Lists

MAILING LISTS

Royalty Investors, by Deed. Retail royalty brokers.

Lists of producers, refiners, gaso. mfrs., pipe lines, drilling contractors, supply companies and machine shops, etc.

OIL INDUSTRY MAILING LIST CO.
909 Tulsa Loan Bldg., Tulsa, Okla.

Addresses Wanted

W. F. (Shorty) Hathcock contact me. IMPORTANT. R. A. Nye, Bennett, Colorado.

Situations Wanted

Geologist—22 years experience. Desires reliable connection. Interest and expense basis considered. Available Jan. 1st. C. Leonard, 2614 Victor St., Kansas City, Mo.

COLLEGE graduate desires connection with opportunity in the future. Single, age 27, reliable, ambitious and hard worker. Previous experience power work. Address Route 1, Box 90, Dallas, Texas.

Supt. Gas lift and Gaso plant desires new connection. Address Box H-513, The Oil and Gas Journal, Tulsa, Oklahoma.

Help Wanted

BROKERS: Established Corporation desires representatives to handle high-class New Mexico oil lease and fee land proposition. P. O. Box 1702, Wilshire-LaBrea Station, Los Angeles, Calif.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Financing

CAPITAL SEEKERS—Put your project before 260 Key-Men. Cost trifling. Details free. Amster Leonard, Fox Theater Building, Detroit, Michigan.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1*	*time*	*$5.00*
1 Inch	*13*	*times*	*4.50 per inch*
1 Inch	*26*	*times*	*4.00 per inch*
1 Inch	*52*	*times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY

CLASSIFIED RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

DIRECTED READER INTEREST

Your ad in these columns will be read by more oil-minded readers than in any other medium in the world. Direct your advertising to these readers through the regular use of this service.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

INDEX TO ADVERTISERS

A

Abercrombie, J. S., Co. .....
Abercrombie Pump Co. .....
Air Reduction Sales Co. .....
Alco Products, Incorporated .....
Aldrich Pump Co., The .....
Allegheny Steel Company .....
Allied Steel Products Corp. .....
Allis-Chalmers Mfg. Co. .....
Allsteel Products Mfg. Co., The ...
American Askania Corp. .....
American Cable Co., Inc. .....
.....Inside Back Cover
American Hammered Piston Ring..
American Iron & Machine Works..
American Lubricator Company ....
American Manganese Steel Company
American Meter Company .....
American Roller Bearing Company.
American Sand-Banum Co., Inc. ... 80
American Seismograph Company ...
American Steel & Wire Company ..
Arrowhead Iron Works .....
Athey Truss Wheel Co. .....
Atlas Drop Forge .....
Atlas Imperial Diesel Engine Co. ..
Atlas Supply Co. .....
Auer, C. L., and W. W. .....
Axelson Manufacturing Company ..

B

Babcock & Wilcox Tubes .....
Badger & Sons Co., E. B. .....
Bakelite Corporation .....
Baker Oil Tools, Inc. 63
Barber-Greene .....
Baroid Sales Company .....
Barret, William M., Inc. .....
Barrett Company, The .....
Beaumont Iron Works Co. .....
Beaver Pipe Tools .....
Bethlehem Steel Co. .....
Boston Woven Hose & Rubber Co. .
Bowen, S. R., Co. 63
Bradford Motor Works, Inc. .....
Brewster Company, Inc., The .....
Bridgeport Machine Company .....
Broderick & Bascom Rope Co. ....
Brown Instrument Co., The 36
Buckeye Traction Ditcher Co., The.
Butler Manufacturing Co. .....
Byron Jackson Co. .....

C

Cameron Iron Works, Inc. .....
Carnegie-Illinois Steel Corporation..
Carson Machine & Supply Co. .....
Cast Iron Pipe Research Association, The .....
Caterpillar Tractor Co. .....
Chain Belt Company .....
Chaplin-Fulton Mfg. Co., The 45
Chapman Valve Mfg. Co., The ....
Chemical Process Co., Inc., The ....
Chevrolet Motor Company .....
Chicago Bridge & Iron Company .. 35
Cities Service Oil Co. .....
Clark Bros. Co. .....
Classified Advertising 102-103
Cleveland Trencher Company, The..
Climax Molybdenum Company ....
Columbian Steel Tank Co. .....
Combustion Engineering Company..
Continental National Bank of Fort Worth .....
Continental Oil Co. .....
Continental Supply Company, The..
Cooper-Bessemer Corp., The .....
Coppus Engineering Corp. .....
Crane Co. 3
Crane Packing Company .....
Crutcher-Rolfs-Cummings, Inc. ....
Cummins Engine Company .....
Curtin, W. H., and Co., The .....

D

Darling Valve & Mfg. Co. 75
Davis Emergency Equipment Co. ..
Davis Regulator Co. .....
Dean Oil Tool Co. 77
Dearborn Chemical Company .....
Devine, J. P., Mfg. Co., Inc. .....
Dewey Portland Cement Co. .....
Diamond Chain & Mfg. Co. 85
Dodge Mfg. Corporation .....
Doheny Stone Drill Co. .....
Dowell, Incorporated .....
Dresser, S. R., Mfg. Co. .....
DuPont DeNemours & Co., Inc., E. I.
Durnite Company .....

E

Eagle-Picher Lead Co. .....
Eastman Oil Well Survey Co. .....
Economy Electric Lantern Co. ....
Edeleanu Company, Ltd. .....
Edward Valve & Mfg. Co., Inc., The
Eiche, R. J. .....
Emsco Asbestos Company .....
Emsco Derrick & Equipment Company .....
Engineering Company, The .....
Ensign Carburetor Company, Ltd. .
Ethyl Gasoline Corporation 55
Everstick Anchor Co. .....

F

Failing Supply Co., Geo. E. .....
Fairbanks Morse & Co. .....
Filtrol Co. of California .....
Firestone Tire & Rubber Co. .....
First National Bank of Dallas ....
First National Bank in Fort Worth
First National Bank & Trust Co., of Tulsa, The .....
Fisher Governor Company .....
Fluor Corporation, Ltd. .....
Foote Bros. Gear and Machine Co..
Ford Motor Co. .....
Fort Worth National Bank, The ..
Four Wheel Drive Auto Co., The ..
Foxboro Co., The .....
Frick-Reid Supply Corporation 6

G

Gardner-Denver Company .....
Garlock Packing Company, The ... 45
Gaso Pump & Burner Mfg. Co. ....
Gasoline Products Co., The .....
Gates Rubber Co., The .....
Gatke Corporation .....
Gearench Mfg. Co. .....
General American Tank Storage and Terminal Co., Inc. .....
General Electric Company .....
General Motors Truck Co. .....
General Paint Co. .....
General Power, Inc. .....
Geophysical Petroleum Surveys, Inc.
Gilmer Company, L. H. .....
Goodrich Company, B. F. .....
Gott, H. P., Mfg. Co. .....
Gould's Pumps, Inc. .....
Grant Oil Tool Company .....
Graver Tank & Mfg. Co., Inc. 53
Gray Processes Corporation, The ..
Great Lakes Fuel Corporation, The. 44
(Distributors for Great Lakes Coal & Coke Co.)
Green Head Bit & Supply Co. ....
Guiberson Corporation, The .....
Gulf Refining Co. 52
Gulf States Utilities Co. .....

H

Halliburton Oil Well Cementing Co. .....Inside Front Cover
Hanlon-Buchanan, Inc. .....
Happy Belting Company .....
Harnischfeger Corporation 49
Harrisburg Steel Corporation 44
Hazard Wire Rope Company .....
Heeter, C. M., Sons Co. 85
Hercules Tool Company .....
Hewitt Rubber Corp. .....
Hills-McCanna Co. .....
Hinderliter Tool Company .....
Hoard Exploration Company 63
Hopper Machine Works, Inc. .....
Hough Mfg. Co., The Charles N. ...
Houston Oil Field Material Company .....
Hughes Tool Co. .....Back Cover
Humble Oil & Refining Co. .....
Hutchins Winch Co. 44
Hyatt Bearings Division, General Motors Corporation .....
Hydril Co. .....

I

Independent Exploration Company..
Ingersoll-Rand Co. .....
International Derrick & Equipment Co., The .....
International Filter Co. .....
International Harvester Co. of America, Inc. .....
International Nickel Company, Inc., The .....
International Petroleum Exposition
International Supply Co. 61

J

J & S Carburetor Co. .....
Jarecki Manufacturing Company ..
Jeffrey Mfg. Co. .....
Jensen Brothers Manufacturing Co..
Jerguson Gage & Valve Co. .....
Johns-Manville Corporation .....
Johnston & Jennings Co. (Oceco Division) .....
Jones & Laughlin Steel Corporation

K

Kellogg, M. W., Company, The ....
Kennedy Valve Mfg. Co., The .....
Kerotest Manufacturing Co. 22
Keystone Driller Co. .....
Kibele Manufacturing Co. .....

L

Landis Machine Co., The 1
Lane-Wells Co., The .....
Larkin Packer Co. .....
Layne and Bowler Co., The .....
Layne & Bowler, Inc. .....
Leach Co., C. H., Inc. .....
Leeds & Northrup Company .....
Leonard Construction Co. .....
Leschen, A., & Sons Rope Co. ....
Lincoln Electric Company, The ....
Linde Air Products Co., The .....
Linear Packing & Rubber Co., Inc..
Link-Belt Company 82
Lone Star Cement Corporation ....
Lucey Products Corporation .....
Ludlow Valve & Mfg. Co., The ....
Lufkin Foundry & Machine Co. ....
Lufkin Rule Co., The 77
Lummus Co., The .....
Lunkenheimer Co., The .....

Mc

McCord Radiator & Mfg. Co. .....
McEvoy, J. H., & Co. .....
McGregor Working Barrel Company
McKissick Products .....

M

MacClatchie Manufacturing Company .....
Macwhyte Co. .....
Maloney Tank Mfg. Co. .....
Manhattan Rubber Mfg. Division, The .....
Manzel Brothers Company .....
Marley Company, The .....
Marmon-Herrington Co., Inc. .....
Martin-Decker Corp. .....
Mason-Neilan Regulator Co. .....
Mathey Machine Works, C. A. ....
Mattison-Wallack & Co. .....
Medart Company, The .....
Mepham, Geo. S., Corp. .....
Merco Nordstrom Valve Co. .....
Midco Tool & Supply Co. .....
Midwest Piping & Supply Company, Inc., The .....
Miller Fuel Engineering Co., Inc. ..
Miller Sand Pump Co. .....
Mission Mfg. Co., The .....
Monsanto Chemical Company .....
Moore, Lee C., & Co., Inc. .....
Moorlane Company .....
Muskogee Iron Works 69

N

National Airoil Burner Company .. 48
National Bank of Tulsa .....
National Carbon Company, The ...
National Lead Co. .. ..
National Supply Co., The 24
National Tank Company .....
National Transit Pump & Machine Co. 8
National Tube Co. .....
Naylor Pipe Company .....
New Deal Specialty Co., The .....
Non-Corrosive Products Co., Ltd., (Mfrs.) .....
Norvell-Wilder Supply Company ...

O

O.C.S. Mfg. Co., The .....
O'Bannon Co., Walter .....
Oceco Fittings .....
Oil Center Tool Co. .....
Oil Well Improvements Co. .....
Oil Well Supply Company 38-39
Oil World Exposition .....
Oklahoma Portland Cement Co. ....
Otis Pressure Control, Inc. .....
Owens-Illinois Glass Company ....
Oxweld Acetylene Company .....

P

Page Steel & Wire Division of the American Chain Company, Inc. ..
Parkersburg Rig & Reel Co., The ..
Parsons Co., The Ralph M. .....
Patterson-Ballagh Corporation ....
Penberthy Injector Co. 21
Petroleum Electric Power Club 26
Petroleum Engineering, Inc. .....
Petroleum Equipment Company ...
Petroleum Iron Works Company ...
Petroleum Specialty Company, The.
Petty Geophysical Engineering Co...
Pittsburgh-Des Moines Steel Company .....
Pittsburgh Equitable Meter Co. ....
Pittsburgh Steel Company .....

P

Polymerization Process Corporation, The 51
Prest-O-Lite Company, Inc., The ..
Pure Oil Co. 2

R

Ratigan, J. P. 63
Reading-Pratt & Cady .....
Rector Well Equipment Co., Inc. ...
Reed Roller Bit Company .....
Regan Forge & Engineering Co. ..
Reid, Jos., Gas Engine Co. .....
Reilly Tar & Chemical Corporation
Republic Steel Corporation .....
Rieber Laboratories .....
Roebling's, John A., Sons Co. .....
Ryerson & Son., Inc., Joseph T. ....

S

Schlumberger Well Surveying Corporation 48
Security Engineering Co. .....
Shaffer Specialty Co., The .....
Shaffer Tool Works .....
Shand & Jurs Co. 58
Sharples Specialty Co., Inc. .....
Shell 56
Sinclair Refining Company, Inc. ...
S.K.F. Industries, Inc. .....
Skinner Co., M. B. .....
Smith, A. O., Corporation 4-5
Smith Company, E. M. .....
Smith, Nowery J., Supply Company
Smooth-On Mfg. Co. 75
South Chester Tube Co. .....
Southern Alkali Corporation .....
Spang, Chalfant & Co., Inc. 31
Spang and Company .....
Sperry-Sun Well Surveying Co. 80
Standard Brake Lining Co. 63
Stahmer Shoe Co., F. H. .....
Star Drilling Machine Company .. 53
Star Manufacturing Company .....
Staynew Filter Corporation .....

T

Taylor Instrument Companies .....
Texas Chemical Company .....
Thornhill-Craver Co., Inc. .....
Timken Roller Bearing Company .. 42
Timken Steel & Tube Co. .....
Tnemec Company, Inc. .....
Toledo Pipe Threading Machine Co. 77
Trackson Company .....
Tretolite Co. .....Front Cover
Trinity Portland Cement Company.
Tube Turns, Inc. .....
Tulsa Chamber of Commerce .....
Tulsa Winch Mfg. Co. .. ..
Twin-Disc Clutch Co. .....

U

Union Carbide & Carbon Corporation .....
Union Carbide Sales Company .....
Union Rubber & Asbestos Co. .....
Union Wire Rope Corporation .....
United American Bosch Corp. 67
United States Rubber Company ....
United Supply & Mfg. Company ...
U. S. Steel Corp., Subsidiaries 38-39
Universal Atlas Cement .....
Universal Oil Products Co. 29

V

Vellumoid Co., The ....
Vernon Tool Co., Ltd. .....
Vinson Supply Co. .....
Vogt, Henry, Machine Co. .....

W

Wall Rope Works, Inc. 63
Walworth Company .....
Warren Petroleum Company .....
Waukesha Motor Company .....
Western Geophysical Company ....
Wheatley Bros. .....
Wheeling Machine Products Co. ....
Wickwire Spencer Steel Company ..
Williams & Co., J. H. .....
Williamsport Wire Rope Co. .....
Wilson Manufacturing Co. .....
Wilson Supply Company .....
W. K. M. Company, Inc. .....
Wolcott Bldg., The .....
Worthington Pump & Machinery Corporation .....

Y

Young Engine Corp. .....
Youngstown Sheet & Tube Co., The

A semifinished nut for high temperatures

The Bethlehem Treated Nut

WHEN temperatures are high the Bethlehem Treated Nut is right in its own element. This nut is made of high-carbon steel, hot-forged for close-knit sinewy structure. Even at temperatures up to 1000 deg. F., it is known for its remarkably small distortion—one oil-refinery test showed 57 per cent less than the nearest rival under conditions of severe heat.

This nut is semifinished—machined to accurate dimensions that assure a positive grip for the wrench, and firm, even seating.

The Bethlehem Treated Nut is especially recommended for use with bolts and studs of the following high-temperature materials:

Supertemp for the highest combinations of temperature and pressure; Mayari A and S.A.E. 4140 for intermediate temperatures; heat-treated carbon steel for ordinary severe service.

From among these combinations the correct fastening can be found for practically every task around the refinery.

Where high Brinell is wanted in addition to heat resistance, specify the Bethlehem Oil-Quenched Nut.

BETHLEHEM STEEL COMPANY, *General Offices:* Bethlehem, Pa. *District Offices:* Albany, Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Hartford, Honolulu, Houston, Indianapolis, Kansas City, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Portland, Ore., Salt Lake City, San Antonio, San Francisco, St. Louis, St. Paul, Seattle, Syracuse, Washington, Wilkes-Barre, York. *Export Distributor:* Bethlehem Steel Export Corporation, New York.

BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL

AT A TIME LIKE THIS YOU NEED

TANKS-

NOT PROMISES

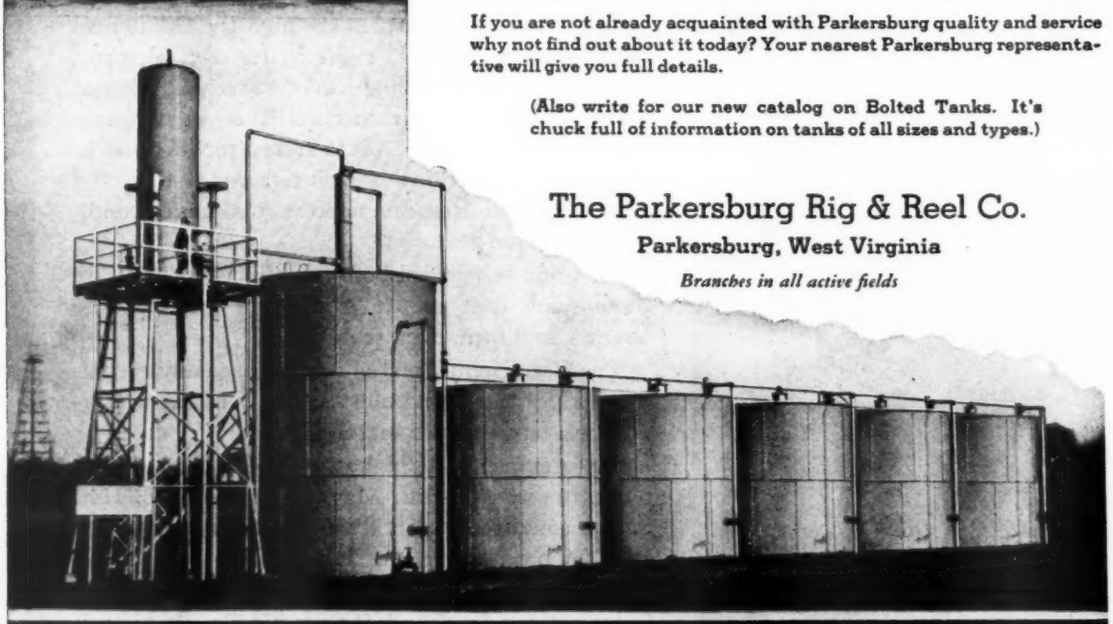
When your well comes in a gusher and shoots up over the crown block there's one thing you're sure of—that a promise of tanks for next week won't do you any good today . . . you need 'em NOW.

Parkersburg knows this. That's why we built up the finest warehouse and service organization the industry has ever known. Today, adequate stocks of every size tank are available in every active field. All you have to do is pick up your phone, call our nearest warehouse, and your service starts immediately.

But it takes more than good service to make and hold customers. It also takes tanks of superior quality and fabrication . . . the kind that Parkersburg has always built. Evidence in this respect is visible in such exclusive features as the corrugated deck, three-in-one valve for vacuum and pressure control, and an improved cleanout opening.

If you are not already acquainted with Parkersburg quality and service why not find out about it today? Your nearest Parkersburg representative will give you full details.

(Also write for our new catalog on Bolted Tanks. It's chuck full of information on tanks of all sizes and types.)



The Parkersburg Rig & Reel Co.

Parkersburg, West Virginia

Branches in all active fields

PARKERSBURG

Hundreds of pipelines like this one, totalling in all over 20,000 miles, are back of the service that Linde offers for your profitable utilization of Multi-Flame Lindewelding.

20,000 MILES OF PIPELINE EXPERIENCE
is behind Multi-Flame Lindewelding

Multi-Flame Lindewelding was developed by the Linde organization from actual experience with the welding of more than 20,000 miles of pipe. Starting with the first use of welding on an overland pipeline in 1911, Linde has been continuously and actively engaged in the improvement of pipeline-welding operations. With this background, Lindewelding has, as its first requirement, the production of welds fully as strong and as ductile as the pipe itself.

Multi-Flame Lindewelding is fast and economical even under varied field conditions. It saves 15 to 40 per cent in oxygen, acetylene, and welding rod and often as much as 50 per cent in time required to make welds.

The many benefits of Multi-Flame Lindewelding are further enhanced by Linde Process Service, which focuses on your particular problems the practical experiences gained in servicing the welding and cutting needs of more than 100,000 users of Linde products. The vast scope of this service is made possible only because Linde has access to the extensive research and engineering staffs of the great organization of which it is a unit. Linde Process Service is not for sale—yet is given gladly to all purchasers of Linde Oxygen. Why not have Linde work with you on your next pipeline project? Address The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, New York and principal cities.

Everything for Oxy-Acetylene Welding and Cutting

LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES FROM UCC LINDE UNION CARBIDE

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription prices: Domestic, $6.00 a year; foreign, $7.00 a year. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Oklahoma, under the Act of March 3, 1879.

Here is shown the colorful Colonel Ed. Walters conducting one of the Osage sales under the famous "million dollar oak" at Pawhuska, Oklahoma. The first of these sales took place November 11, 1912 and paid the tribe $39,436. In the twenty-five years since, their income from these sales is estimated totaling $113,752,000.00.

"Going—going—gone!" as uttered by Colonel Ed. Walters, famed auctioneer of oil rights, spelled huge wealth for the great Osage Tribe. But, the "going—going—gone" of a dying oil well is another story. DOWELL, through sound methods of Acidizing is prolonging production for thousands of producers—pouring a combined wealth totaling millions into their pockets.

DOWELL

Now in MEXICO . . .
Dowell Sociedad Anonima, Apartado 2424
Mexico, D. F., Mexico

Tampico, Tamaulipas, Mexico

And in CALIFORNIA . . .
Dowell Incorporated, 310 Santiago Avenue
Mail Address: P. O. Box 229
Telephone: 84766 • Long Beach, California

DOWELL INCORPORATED • *Subsidiary of* THE DOW CHEMICAL COMPANY • *Executive Office:* MIDLAND, MICHIGAN • *General Office:* KENNEDY BUILDING, TULSA, OKLAHO

HOBBS, NEW MEXICO — *PHONE, WRITE OR CALL AT ANY OF THE FOLLOWING OFFICES:* — WICHITA FALLS, TEXAS

MT. PLEASANT, MICHIGAN • MIDLAND, TEXAS • SEMINOLE, OKLAHOMA • SHELBY, MONTANA • SHREVEPORT, LOUISIANA • TULSA, OKLAHOMA • WICHITA, KANS

OIL AND GAS WELL CHEMICAL SERVIC